DOCUMENT RESUME

ED 346 791 HE 025 610

AUTHOR Benjamin, Michael
TITLE Developmental Theory as a Guide to Policy and Research: Critique and Reformulation. Student-Environment Study Group. Student Development Monograph Series. Volume 1.
INSTITUTION Guelph Univ. (Ontario).
PUB DATE 86
NOTE 71p.; For related documents, see HE 025 611-613.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Colleges; *College Students; Family Role; Foreign Countries; Higher Education; Individual Development; Institutional Role; Models; *Student Development
IDENTIFIERS *Developmental Theory

ABSTRACT

This review offers a theoretical reformulation of student development useful for policy and research and critically assesses four bodies of theory for developmental models addressing the family, the individual, complex organizations, and the interaction between the individual and the environment, respectively. In each category several models are reviewed and critically evaluated with concepts that appeared useful selected out as the basis for an ecological reformulation of student development. Its generic form was that of two boxes, one representing the family, the other representing the university as complex organization, the two linked by students with commitments to both. There follows a three-part explication of this model: (1) a view of the family as complex system whose shaping influence on student development is ongoing; (2) a view of the university as complete system in which relationships between staff define organizational goals which impact student development; and (3) a view of the interaction between students and university which emphasizes student-faculty relations, peer relations, social anchors, family "fit", patterns of demand, emergence through time, and attrition/retention. A conclusion briefly discusses the implications of the model. Included are 4 figures and over 250 references. (JB)

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DEVELOPMENTAL THEORY AS A GUIDE TO POLICY AND RESEARCH:

CRITIQUE AND REFORMULATION.

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DEVELOPMENTAL THEORY AS A GUIDE TO POLICY AND RESEARCH:

CRITIQUE AND REFORMULATION.

by

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c 1986

Student Development Monograph Series, Volume 1

EXECUTIVE SUMMARY

Developmental theories of student life are in crisis. Theoretical diversity, substantive parochialism, and non-commensurability have either rendered them moribund or forced staff to select among them arbitrarily, based on their own idiosyncratic preferences. On the assumption that theoretically-guided action is better than ad hoc selection, the purpose of this monograph is to create a theoretical reformulation of student development that will be useful for both policy and research.

Towards that end, an assumptive frame was selected as a basis for critical evaluation that was sufficiently abstract to overcome the problem of non-commensurability. This involves six assumptions: relational entitivity, circular causality, wholism, activity, dynamic change, and temporal relevance. These assumptions are consistent with a developmental perspective and also congruent with General Systems Theory as a generic metatheoretical ground for the present work.

This assumptive frame was then used to critically assess four bodies of theory concerned, respectively, with developmental models of the family, the individual, complex organizations, and the interaction between the individual and the environment.

With respect to family development, six processes, one typological, one developmental and two stress models were reviewed. Critical evaluation suggested that, while useful, they lacked specificity, were often narrowly focused and sometimes arbitrary.

With respect to individual (student) development, three psychosocial, five cognitive, two maturational and two typological models were reviewed. Critical evaluation revealed that, while useful, these models overly emphasized differentiation at the expense of integration, ignored both gender differences and affective processes, concentrated on continuity at the expense of discontinuity, focused on single as opposed to multiple pathways of development, and largely interpreted interpersonal interaction in purely cognitive terms.

With respect to organizational development, six theoretical models were reviewed, including formal, typological, contingency, action, interorganizational, and systems theories. Critical evaluation showed that, while useful, these models were characterized by oversimplification and a tendency toward organizational anthropomorphism and subsequent reification.

Finally, with respect to student-environment interaction, six models were reviewed, including theories of the physical environment, student subculture, personality, needs, social climate and the ideal self. Critical evaluation indicated that, while useful, these models emphasized the student (singular) at the expense of the environment, with the latter characterized more as a featureless landscape rather than one populated by specific and significant others.

In each case, central concepts were reviewed, then critically evaluated in light of the assumptive frame. Those concepts which appeared useful for purposes of reformulation were selected out. These variables were then collected together and subsequently used as the basis for an ecological reformulation of student development. Its generic form was that of two boxes, one representing the family, the other representing the university as complex organization, the two linked by students with

commitments to both of them. Explication of this model, coupled with a wide-ranging but selective review of the literature, involved three parts: first, a view of the family as complex system whose shaping influence on student development is on-going throughout the university years; second, a view of the university as complex system in which relations between staff members across and within hierarchical levels operates to define those organizational goals which significantly impact on student development; and, third, a view of the interaction between students and the university which emphasizes such processes as student-faculty relations, peer relations, social anchors, family "fit", patterns of demand (ie., stress), emergence through time, and attrition/retention.

The document concludes with a relatively brief discussion of the implications of this model for policy and research.

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1.0 INTRODUCTION

Faculty and staff, dedicated to the creation of programs and policies for university students, have traditionally had an ambiguous relationship to theory. When universities were small and the relationship between faculty, staff and students personal, policy and programming was based primarily on received wisdom, common sense and ad hoc choices and decisions. This approach seemed to work, at least opposition was neither vociferous nor visible, and the consequences for error minor. The need for theory, as a guide to action, was not urgent nor was its absence a matter of much import for most.

The geometric increase in student populations and their vociferous discontent during the decade of the 1960's led to a reappraisal of existing policies and procedures (Ender et al., 1984). The natural tendency to associate existing ad hoc practices and student unrest suggested that theoretically-based procedures and research into student life might be desirable. It is no coincidence that it was during this period that the bulk of extant psychosocial theories of student development originated. Similarly, it was then that research into student life began in earnest, including, for example, the development of a number of research journals devoted to the topic (eg. Educational Administration Quarterly).

The history of such theories in the intervening years to the present has been one of rapid and sustained growth. Theories and attendant research have proliferated, the literature has grown so large as to become unmanageable for the average reader, with reviews of the literature beginning to appear in consequence (eg. Banning, 1978; Banning & McKinley, 1980; Bean, 1985; Conyne & Clack, 1981; Drum, 1980; Falk, 1975; Huebner, 1979, 1984; Paul, 1980; Pettigrew & Auger, 1986; Rodgers, 1980; Timmons, 1975; Widick et al., 1981). Ironically, where before guidance was lacking because of a dearth of theory, a similar outcome now obtains due to a surfeit of diversity. Indeed, in the virtual absence of serious critical debate, development theory has become "the new orthodoxy" (Bloland, 1986). The result, I suggest, is a crisis of theory. This conclusion is based on three considerations.

The first concerns the problem of non-commensurability. Seen in overview, extant theories vary so widely in terms of their substantive focus, their definition of central concepts and their methods of measurement that efforts at comparison and especially at integration are rendered futile. The amount of slippage across theories is such that they are really not truly comparable, that is, they are in fact theories of different objects despite the fact that the ostensible focus - on the student - remains the same.

The second consideration concerns parochialism. All disciplines have a natural tendency to identify themselves as unique and different from all others. The ease with which this can be done relates directly to the nature of their subject matter. Physics, while it overlaps to some extent with chemistry, nevertheless has unique concerns which distinguish it from other disciplines. "The university student" constitutes no such specific object of inquiry. On the contrary, student life represents the nexus of a wide range of interests and concerns. Still, theorists and professional researchers in the area have tried mightily to define "the student" as a specific area of interest with the result that the existing literature is distinctive as much for what it omits as for what it includes. The psychological dynamics

of students is extensively explored but nowhere is it evident that students do not spring de novo into being but retain potent ties to family and peers. Similarly, the university as physical environment is examined, as are student perceptions of that environment, but the university as complex service system or as hierarchical organization is given distinctly short shrift. The factors involved in student retention or attrition are endlessly debated but any notion of "stress", so prominent in other literatures, is conspicuous by its absence. This list could continue but need not. The point is that the extant literature appears characterized by substantive parochialism marked by the lack of multidisciplinary cross-fertilization. Indeed, this deficit helps explain a finding to be noted in a later section, namely, that existing theories can typically account for only about 20% of the explained variance with respect to any given substantive issue, a proportion that does not promote confidence on the part of administrative personnel burdened with the responsibility of policy and program decision-making.

This brings me to the final consideration, namely, the relationship between diversity and choice. Assuming that the university represents a complex work environment, it seems reasonable that staff and faculty should look to theory as a way of simplifying the responsibility of policy and program decision-making. While this may indeed be the consequence for specific theories, the same cannot be said for the literature as a whole. Indeed, quite the opposite applies. Whereas one theory calls attention to personality type, another refers to student subculture while a third focuses on the university as a causally significant physical environment. Such theoretical diversity is functionally as good as no theory at all because it raises a host of questions while answering none or at most few. It is especially problematic for research since limited resources cannot possibly cover the theoretical waterfront and must instead be committed to one or another approach, but which?

Given these considerations, an obvious choice on the part of staff and faculty is to eschew theory altogether. The dismal results of the 1960's and 1970's, however, suggest that whatever the level of moral certainty involved, ad hoc policy making is no guarantee of success and indeed presents the very real risk of failure. The alternative is to call for theoretical integration and reformulation with the aim of generating a coherent theoretical model which may simultaneously operate as guide to both specific aspects of policy-making as well as research.

Development of such a theoretical integration and reformulation is the central goal of the present paper. Accordingly, in the next section, I develop grounds for conducting such an enterprise and then proceed to review and critically explore four bodies of theory, namely, those concerned with (1) family change and development, (2) student development, (3) the organizational dynamics of complex systems, and (4) the interaction between the individual and the environment. The concepts thus culled from these literatures will provide the basis for a process reformulation grounded in the assumptive framework of systems theory and elaborated in both flow chart and discursive forms. I conclude by exploring the implications of the model for policy-making and research.

2.0 ONTOLOGY AND EPISTEMOLOGY: A BASIS FOR CRITICISM AND INTEGRATION

A moment's thought suggests several bases upon which the extant literature might be critically examined. One possibility involves comparison between the assertions of relevant theorists and available empirical data. Based on their extensive review, Offer and Sabshin (1984) make abundantly clear that in large part such data do not exist. Rather, while theorists have sought empirical support for their own assertions, they have eschewed testing the assertions of others. In contrast, many theorists, especially in the area of psychosocial development, have refrained from any empirical analysis whatever, relying instead their own intuition and the empirical work of others (eg. Erikson, 1963).

Another possibility is to critically evaluate extant theory from the perspective of a specific theoretical orientation. This might be useful if some sort of overarching formulation existed. The fact of this paper makes clear that no such formulation exists as of this writing. Further, the problem of non-commensurability similarly vitiates any effort to be critical from within this body of theory. The most that could be hoped for is mild incremental change as one author locates a lacunae in the formulation of another and visa versa. Given that such an effort would, of necessity, have to operate within the assumptive frame provided by the theories in question makes the likelihood of any radical reformulation distinctly unlikely.

The same can be said for criticism on the basis of internal logical consistency or research methodology. Such an approach to "interactional theories" has already been provided by Walsh (1973, 1978) who, as was to be expected, locates various weaknesses in existing theory but cannot go beyond their confines.

This brief review of possible bases of criticism makes clear that the key problem concerns the **framework of assumptions** from within which integration efforts begin. So long as evaluation operations **within** the confines of the theories in question, radical reformulation becomes impossible. Rather, what seems to be required is that the evaluator step **outside** that frame to one more basic or fundamental. In turn, this creates a position from which an overview and integration becomes possible, while at the same time obviating the problem posed by non-commensurability. In the following subsections, I create such a frame based on **two** ontological and **four** epistemological assumptions. These assumptions have been selected based on twin considerations: first, that they be consistent with a developmental perspective, that is, admit the possibility for **both** stability and change through time; and, second, that they accord with a preferred explanatory metamodel, namely, **General Systems Theory** which is sufficiently generic to encompass the wide range of disparate concepts whose integration is the purpose of this effort.

Before proceeding, a special feature of assumptive frames requires mention, namely, that they are not empirically falsifiable (Reese & Overton, 1970). All theories, whatever their substantive concern, are grounded on a number of fundamental assumptions about the nature of the world. These may be made explicit, more frequently they are left implicit. In either case, they are fundamentally

matters of **belief rather than evidence** and thus are judged **not** in terms of their truth value but rather their utility, that is, their **use value**. Consequently, in what follows, no effort has been made to present data to support my choice of the constituents of the assumptive frame to be presented.

2.1 Ontological Assumptions

Ontology is that branch of philosophy concerned with what is to be taken as real in the world. As this applies to science, two fundamentally divergent perspectives have emerged centred on assumptions concerning **entitivity and causality** (Benjamin, 1977, 1982, 1986).

Entitivity refers simply to what entities in the world shall be considered as real or fundamental and which epiphenomenal or constitutive. One group of theorists regard the individual or monad as the only real entity, with groups, families, organizations and so on as constituted out of the cumulative character of the individuals which make them up. Models concerned with such things as personality, ego development and cognitive growth and even environmental primacy necessarily build on this assumption.

The alternative view is that neither the individual **nor** the group is central or primary - this will vary as a function of the interests and objectives of the researcher - but rather that the world is populated by relational entities, that is, it arises out of the **interaction** among and between constituent lower-order elements. This view has come to form the cornerstone of the physical sciences (Doherty, 1986) and, in the social sciences, is embodied by models of family process or individual-environment interaction. It is exemplified by the following comment by Minuchin (1984: 2):

> We are a culture that has enthroned the individual. We have an extraordinarily rich literature of individual psychology, but our insight has focused on the being inside the self. This is an extraordinary feat of the imagination because "disconnected" individuals do not exist. Life consists of growing, mixing, cooperating, sharing, and competing with others. Surely, most of us have had our most significant experiences within some form of the complex social unit we call a family.

In keeping with this perspective, the balance of this paper will be guided by the assumption of **relational entities**. While this accepts as legitimate theories of and about the individual, I will be especially critical of such efforts which focus on "disconnected" individuals, that is, individuals deprived of any social context or in which that context takes on the appearance of a grey and featureless landscape, populated only by "sources of stimulation" or "tension" or even "challenge".

Complementary debate centres on assumptions concerning causation. While all theorists accept or rather assume that "nothing comes out of nothing", that is, that all things in the world are caused, there are at least two divergent views concerning the nature of causation.

One view holds that causation is deterministic and necessarily takes the form of a linear, unidirectional causal chain. Various developmental theories which assert that the present behaviour of the individual is necessarily produced either by events in his or her past or by environmental reinforcement contingencies build on this assumption (Bowers, 1973).

The alternative view suggests that causation rather be seen as circular, arising out of on-going mutual interaction, with the causal influence of past events a function of time, the further away in time, the less influential (Laszlo, 1972). Interactional models which explain behaviour in terms of on-going interactional processes in the present build on this assumption. It is exemplified by the following observation by Chein (1972: 25-26):

> In the prevailing view, organism interacts with environment, and the outcome of the interaction is the response. Either or both may be changed in the process, but the next response is again an outcome of an organism distinct from but interacting with a distinct environment. That is, in the prevailing view, every one of the determinants of the response is contained in the organism or the environment. By contrast, the interaction I am discussing, which I say affects the outcome of other interactions between the organism and environment, is not distinctly an organismic nor an environmental fact. When it becomes a condition of mediating interactions (note well, not succeeding interactions, but mediating interactions that determine the course of the primary interaction that is still on-going while the mediating interaction occurs), we are dealing with a new class of determinants of behaviour. (Parentheses in original)

What Chein has called mediating interaction is more generally known as **circular causality** and that too will guide the discussion that follows. Once again, such a view is particular responsive to explanations which are sensitive to interaction and context. Conversely, it is a view highly critical of explanations which rely on in-dwelling properties and built-in "plans".

2.2 Epistemological Assumptions

Epistemology is that branch of philosophy concerned with how we learn about the world. As this applies to science, two fundamentally divergent perspectives have emerged centred on assumptions concerning **level, action, change, and time** (Benjamin, 1977, 1982, 1986).

A long-standing debate in the physical and social sciences concerns the appropriate strategy for apprehending the complex phenomena which comprise the world. Those who adopt a reductionistic perspective assume that most phenomena are simply too complex to be understood fully and adequately as such and consequently seek to first examine their lower order elements. Understanding of the whole would thus derive from reconstitution by integration of explanations concerning the operation of the elements. This entails the further assumption that such reconstitution is necessarily additive, that is, that the whole really is nothing more than the sum of its parts.

The contrary view holds that the characteristics of the parts derive, at least in part, from their interaction and organization into the whole. In this sense, wholes are irreducible without some loss of those very processes which give the whole its fundamental character. Thus, wholes are seen to emerge out of the interaction among and between the parts - they are more **complex** than the sum of their parts - and it is this interaction which becomes the focus of study and explanation.

While this debate is on-going there is an increasing tendency to favour a **holistic** approach to explanation (Koestler, 1978), a tendency that I will follow in this discussion. This means in effect that

while the data of reductionistic studies are not in dispute - for example, that some adolescents show evidence of a higher level of cognitive complexity than others - their interpretation is, since such data must, within the bounds of this assumption, be placed in some larger social context.

A related concern entails assumptions about the nature of man. Those who conceptualize the environment has having a causal effect in shaping human behaviour tend to perceive men and women as essentially passive, simply responding to and coping with external demand. From this perspective, it is assumed that the environment is all and that there is a high degree of correspondence between the quality of the environment and the level of functioning of the individuals who inhabit that environment.

The contrary view holds, first, that neither individual nor environment is preeminent, each interacting with and affecting the other, and, second, that man is by nature **active**, seeking always to shape the environment in which he or she lives and operates. Again, there is a gradual tendency to accept this assumptive frame (Sutherland, 1973), one which I will follow here. It should be noted, however, that acceptance of this view is by no means universal.

A third epistemological issue concerns the matter of change. Again, the debate is joined around two discrepant perspectives. On the one hand are those who view much or indeed most developmental change as a function of some built-in "plan", or "model". This "epigenetic" perspective thus views development as more or less smooth and continuous, as in physical growth, and assumes in consequence that environmental processes, so long as they are within a normative range, need not be closely examined.

On the other hand are those who view change and development as necessarily processual, that is, **emergent** out of the interaction between the individual and those significant social others with whom he or she comes into regular and intimate contact. From this perspective, growth and development are open-ended, with few certainties, and with the possibility of multiple pathways of development. The role of chance events, of sudden and unpredictable shifts, and retrogression are all consistent with this assumption. Support for this assumption continues to grow (Offer & Sabshin, 1984) and it is a view that I will accept for purposes of this discussion. However, it remains highly controversial, with evidence on both sides of the debate accumulating rapidly.

The final assumption concerns the status of time. One view tends to more or less disregard time as an important consideration. Instead, phenomena tend to be seen in cross-section, freed from any historical, generational or evolutionary context. Such views tend especially to predominate in the organizational literature where many theorists focus on explanation of the structure at hand rather than with how it came to be and how it is likely to change in the future.

The contrary view, held by many developmental and family theorists, is that change over time is a critical concern. With respect to organizational processes, for example, this perspective assumes that the history of organizational and program development shapes the way those involved in it see and interact with each other, and thus affects both policy and day-to-day decision-making (Benjamin, 1986). Similarly, family theorists who accept this assumption posit the nesting of interaction patterns along

some time line (eg. Cooklin, 1982), with short-term patterns embedded within medium range patterns embedded in long-term patterns. In this case, the consensus among developmental and family theorists regarding the salience of **temporal processes** will be reflected in the present paper.

This hexagon of assumptions - concerning relational entities, circular causality, holism, activity, dynamic change, and temporal relevance - will form the assumptive frame for the critique and reformulation of the four families of theory to be explored. The close correspondence between this frame and that provided by General Systems Theory (Benjamin, 1982; Bertalanffy, 1968; Buckley, 1967) is, as noted above, quite deliberate. In both cases, the frame is non-substantive - it does not seek to explain any specific phenomena but is rather about the organization of phenomena in general - and is highly abstract in nature. I believe both properties essential to mount the reformulation required.

As to the substantive reviews to follow, in each case I will use much the same format. Each substantive area of theorizing encompasses a large and diverse literature. Their full elaboration would extend beyond the scope of a paper to a textbook size monograph. To remain within the bounds of a paper, then, following a brief introductory statement, I will summarize the key concepts and assertions of each model - with a standing apology to authors for any inadvertent oversimplification. I will then evaluate each model and, where appropriate, select out those concepts for inclusion in a reformulation. Finally, each section will close with a comment concerning the likely relevance of the concepts selected for the explanation of the university experience of students.

3.0 DEVELOPMENTAL THEORIES OF THE FAMILY

Of all the sources of influence in the life of the average individual, virtually none is more potent than that of the family. It is into a family that we are born, grow and develop, give rise to new generations, and finally die. It is thus a system which shapes our lives throughout the life course. Given its salience, it would seem reasonable to expect that the family would encompass a large body of developmental theory. While the body of theory is in indeed large, only four bodies of theory are in fact relevant to family development: **process, typological, developmental and stress models.**[1] I briefly summarize each of these in turn.

3.1 Process Models

All process models of family development share a small set of assertions, namely, that: (1) family relations are not random, but rather highly organized or patterned; (2) such patterns potently shape behaviour, the expression of feelings and the construction of meaning; (3) by and large,

[1] *In what has come to be regarded as a standard text in the area, Nye and Berardo (1981) differentiate between 11 models of the family in the sociological literature: anthropological, structural-functional, institutional, interactional, situational, psychoanalytic, social-psychological, developmental, economic, legal, and western christian. Of these, only theorists from the developmental perspective have been included in the discussion which follows.*

interactional patterns tend to operate outside the awareness of family members; and (4) such patterns shape the behaviour of family members both when they are interacting with each other as well as when they interact with persons outside the family system.

Beyond these assertions, at least six distinct models of family process can be differentiated.

3.1.1 **Communication Theory** (eg.Jackson, 1965; Watzlawick et al., 1967; Raush et al., 1979) advances a set of axioms about family communication the most famous of which is that one cannot not communicate. It locates both health and pathology in patterns of interpersonal communication and originated the notion of the "double bind" (Bateson et al., 1956). Following the "double bind", a major source of communication pathology is thought to reside in a discrepancy between different levels of communication.

3.1.2 **Strategic Theory** (eg. Haley, 1980; Watzlawick et al., 1974; Palazzoli et al., 1978; Bross & Benjamin, 1982), while it acknowledges communicational "tangles" as one source of pathology, also locates problems in several different patterns of behaviour. One distinction is between "first" and "second" order reality in which families respond to a "difficulty" with more of the same "first" order behaviour which gave rise to it in the first place. Consequently, their solution now becomes the "problem", with intervention aimed at moving the system to "second" order thinking in which new and different solutions can be discovered. Paradoxical interventions are characteristic techniques used to achieve this end. Family problems are also located in difficulties families have in overcoming points of transition in the life cycle and in inappropriate cross-generational coalitions between family members, what Haley (1967) has called "perverse triangles".

3.1.3 **Structural Theory** (eg. Minuchin, 1974; Minuchin et al., 1978) posits that central to the functioning of healthy families is a structural dimension in which there are clear boundaries between spousal, parent-child and sibling subsystems. Families are thought to vary on a continuum from systems in which boundaries are inordinately impermeable ("disengaged") to those in which boundaries are inappropriately permeable ("enmeshed"), with healthy families concentrated in the centre.

3.1.4 **Epigenetic Theory** (Wynne, 1984) argues that two distinct processes operate in all families across the life cycle: the process of structural change and the process of relational unfolding. Structural change is arbitrary, tied to normative processes in society, as in the age children go to school. In contrast, relational processes are thought to be epigenetic and involve four invariant phases - emotional involvement, communicational patterning, joint problem-solving, and mutuality - with intimacy a fifth phase that may or may not occur. Wynne argues that each of these phases may be the locus of dysfunction (eg. communicational deviance) and that, in addition, problems may arise out of asynchrony between the arbitrary demands of the family's life cycle and the invariant but temporally variable requirements of relational unfolding.

3.1.5 **Paradigm Theory** (Reiss, 1981) is based on 17 years of experimental research with asymptomatic, delinquent and schizophrenic families. This suggests that in coping with crisis, families develop a characteristic style of thinking and problem solving, the "family paradigm", which regulates both how they see and relate to each other as well as how they view their larger social and

organizational environment. The paradigm is based on three dimensions of family functioning: configuration, the ability to discover patterning in experience; coordination, the extent to which members see themselves as a group or as a collection of separate individuals, and whether the world is seen as a friendly or threatening place; and, closure, the tendency to close off the search for information in relation to a problem quickly or slowly. Combinations of these dimensions yield four family types: environment-sensitive, distance-sensitive, consensus-sensitive, and achievement-sensitive. These family types may all exist free of symptoms; however, whereas environment-sensitive families show sufficient flexibility to cope with stress, Reiss suggests that the other three types are much more likely to show evidence of stress-related difficulty eventuating in symptom production. He also argues that the family's paradigm will be predictive of how they relate to kin and how they select and interact with organizations.

3.1.6 Integrative Process Theory (Benjamin, 1982) argues that none of the above models captures the full range and complexity of family process. Instead, Benjamin constructs a model based on six central constructs - the levels of interaction, affect and meaning, demand (ie., stress), preparedness and variety or chance. All families contend with demand, the level of demand a function of external events and internal processes, and the family's construal of demand seen through the lens of their patterns of behaviour, affect and meaning. Their response to increased demand (eg. a death in the family, the loss of employment, an impending wedding of a member) will then be a function of prevailing demand at onset, their preparedness, their construal process and the nature and repertoire of their patterns of interaction. The interaction among these factors will predict either the evolution of symptomatic behaviour, some transformation of the family system or its traumatic dissolution.

3.2 Typological Models

There have been a large number of efforts to develop typological model of family systems (Beavers, 1977; Kantor & Lehr, 1975; Lewis et al., 1976; Moos & Moos, 1976; Stierlin, 1974; Wertheim, 1973). No effort will be made to summarize them all. Rather, I will focus on Olson et al.'s (1979, 1983; Olson, 1986) "circumplex" model, both because it has become the single most prominent model of its type and because it is the most well validated.

Based on an extensive review of the family literature, Olson and his colleagues concluded that families may be characterized on the basis of their location along two continua: cohesion and adaptability, with "communication" seen as a facilitating third dimension. They define cohesion as an emotional bond between members, while adaptation is seen as the ability to alter power structures, role relations and relational rules in response to situational or developmental stress. The dimensions are conceptualized as orthogonal in shape (ie., at right angles to each other) and yield 16 family types, with four balanced types, four extreme types and eight moderate types. They present evidence which suggests that symptomatology is more likely to appear among extreme than among balanced types, with family type related to the sorts of symptoms likely to arise. The primary vehicle for family diagnosis

is a well validated instrument known as FACES III (Family Adaptability & Cohesion Evolution Scales) (Olson, 1986).

3.3 Developmental Models

There has been a large number of studies directed towards the construction of a model of family development through the life cycle (for a review, see Carter & McGoldrick (1980) and Nye & Berardo (1981)), with the work of Hill (1970) and Duvall (1977) the most prominent. (To avoid redundancy, review of models of individual development will be deferred to the next section concerned with Psychosocial Theories of Development.)

All models in this group follow essentially the same form, although the details may vary in terms of specificity (eg. the number of stages varies from five to 24). This posits that: (1) all families pass through a set number of stages of development; (2) these stages occur in sequence, are invariant (no stage can be skipped), and are age-graded; (3) each stage is characterized by a set number of family tasks which must be performed reasonably well if the family is to pass on successfully to the next stage; and (4) normal progression through the life cycle ensures the continuity of the family system as offspring marry and begin the cycle anew.

3.4 Family Stress Theory

Since its inception in 1936 by Hans Selye, the stress field has been a major area of research and theory; its attendant literature is nothing short of massive (for an overview, see Goldberger & Breznitz, 1982). Broadly, two classes of theory may be distinguished: one concerned with individual adaptation and coping, the other concerned with family stress. No effort will be made here to elaborate on each body of theory; rather, two representative examples will be presented instead: the work of Lazarus (Lazarus, 1966; Lazarus & Launier, 1978; Holroyd & Lazarus, 1982) on individual adaptation, and McCubbin and Patterson (1983) on family stress adaptation and adjustment.

Lazarus and his colleagues make a critical distinction between stress, appraisal and coping. With the exception of certain physical states (eg. cold, heat, food/water deprivation), stress represents an individual's judgment that a given event or process taxes or exceeds their resources for its management. This judgment process or "appraisal" is based on past experience, the individual's belief system, and their perception of the availability of physical and social resources. The results of this appraisal are that the stressor is seen to represent either a challenge or a threat, with appropriate action in either case then selected. This response, the individual's coping effort, is then guided by feedback from the results of this effort to shape the stress experience and may, in turn, affect both current and future appraisal efforts. Moreover, coping efforts may either involve problem- or emotion-focusing coping, and thus may be rational or irrational in character.

Whereas Lazarus and his colleagues see coping as a complex psychological process, McCubbin and Patterson conceive of adjustment and adaptation in interactional terms. Hill's (1949, 1958) ABCX model is used as the model's starting point. This suggests that family crisis (X) is a product of the

stressor (A), the family's resources (B) and their definition of the event (C). McCubbin and Patterson refer to these processes as family adjustment, reserving the term family adaptation for their post-crisis response. This too is conceptualized in terms of ABCX - hence the "double ABCX model" - with the quality of family adaptation (functional or dysfunctional)(Xx) seen as a function of the pile up of stress events (Aa), the family's existing or new resources (Bb) and their perception of the crisis (Cc).

3.5 Critique and Concept Selection

Most of these theories have something to add to our understanding of family developmental processes, but all remain problematic in some way.

Process models yield complex portraits that are extremely useful for theoretical purposes. Their limitations primarily reside in their tendency to focus on one or another dimension to the exclusion of others, all or at least most of which seem intuitively reasonable. Thus, the emphasis on levels of communication tends to neglect the family's coalition structure, its meaning system or the clarity of boundaries between subsystems. Furthermore, Benjamin's (1982) distinction between meaning, affect and interaction seems more inclusive than that between levels of communication, while none of these models provide an adequate conceptualization of affect processes. Benjamin's emphasis on chance (variety) and preparedness distinguishes it from the other models; both concepts appear to have merit. In terms of clarity and empirical support, the epigenetic model seems least effective - it uncritically accepts notions concerning the life cycle - although, like several of the other models, it does call attention to the notion of discrepancy between processes or levels.

What the process models lack in breadth they make up for in detail. The converse is true of the typological models. It seems unlikely that the complexity of family life can be captured by only two dimensions, despite the authors' claim that the circumplex model can reliably distinguish between clinical and non-clinical families. That is, its usefulness as a diagnostic tool should not obscure its limitations as an explanatory model. This said, the dimensions of cohesion and adaptability do seem to add substance to efforts to characterize a family's response repertoire and the nature of their interaction patterns.

The advantage of the process and typological models is that they already operate within the assumptive frame I set out above. Such is not the case with the developmental models which, in this context, appear linear, static and arbitrary. No effort is made, for example, to rationalize the choice of family tasks and it remains unclear whether the model applies at all to various ethnocultural groups (see McGoldrick et al., 1982) or families of varying size and age/sex composition. Apart from the fact that such theorists capture the **fact** of family change and development, their formulations add little to **how** such processes occur and with what variation.

Finally, stress models are useful in at least two respects: they highlight the importance of including stress in any adequate model of family process; and, they make abundantly clear that coping and adaptation are not simply a function of the stressor and the individual or family, but rather a complex function of the interaction between the two. Indeed, both of the models examined above

suggest that, with few exceptions, a given event or process which precipitates crisis in one family may not even be perceived as significant for another. Where they appear problematic is precisely where process models shine, namely, in their failure to specify those patterns of meaning, affect and interaction which guide processes of appraisal, adjustment and adaptation.

Review of this complex body of work allows the extraction of a number of concepts that will later be useful for purposes of constructing a reformulation. These include: levels of meaning (eg. configuration, coordination and closure), affect (eg. cohesion), and interaction (eg. adaptation, boundary clarity, and coalition structure), preparedness, perceived demand (both as to intensity and quality (challenge or threat)), discrepancy (between patterns at any two levels), chance, and external environment.

The central relevance of these concepts for understanding student experience resides in the suggestion that students come to the university - understand it, perceive it and experience it - through the lens of particular patterns of meaning, affect and interaction. These patterns, in turn, may help shape various aspects of their experience, including, for example, the perceived level and quality of demand it represents, students' preparedness for the university as academic and social environment, their willingness to become involved in university life, and their resistance to or acceptance of notions of attrition and retention. Moreover, the relationship between student, family and university should not be seen as relevant only in the initial phase of student entry into the university environment. Rather, to the extent that student-family relations continue through time, such relations should continue to be a salient factor, mediating students' experience of the university throughout the course of their university career.

4.0 DEVELOPMENTAL THEORIES OF THE INDIVIDUAL (STUDENT)

The second group of theories to be examined focuses on the development of the individual, especially among adolescents and young adults attending a college or university. Following Widick et al. (1981), I will distinguish between **four** primary groups or families of theory: **psychosocial development, cognitive development, maturation, and typological models** (for reviews of this literature, see also Banning, 1978; Huebner, 1984; Paul, 1980).[2] Given its relevance to my efforts at reformulation, I will also briefly summarize several models of student retention and attrition (for reviews of this literature, see Anderson, 1985; Bean, 1985; Falk, 1975; Pascarella & Chapman, 1983; Pettigrew & Auger, 1986; Noel et al., 1985; Timmons, 1975).

[2] *For an alternative way of characterizing or categorizing these theories, see Drum (1980) and Rodgers (1980).*

4.1 Psychosocial Theories

Psychosocial theories of individual development can ultimately be traced to their roots in psychoanalytic theory based on the seminal work of Freud (Benjamin, 1977) and, more recently, Erikson (1963, 1968). Theorists in this family share a number of fundamental assertions: (1) development over the life cycle involves a number of discrete stages; (2) these stages are sequential but not necessarily invariant; (3) each stage requires completion of or mastery over certain tasks, challenges or conflicts; (4) the transition from one stage to the next is marked by a developmental crisis produced by the discrepancy between internal psychological change and external societal demands; (5) the timing of stages is largely epigenetic, although it may also be influenced by societal and cultural variation; (6) development, defined in terms of qualitative change, is cumulative, although the stages are not seen in hierarchical terms, nor is any claim made that they are necessarily universal; (7) while movement between stages may be smooth, the opportunity for stabilization, regression or advance is frequent; and (8) failure to "progress" (in psychoanalytic terms: fixation at a given stage) is indicative of inadequate mastery of developmental challenges and possibly increased risk of psychopathology. Of the various theorists whose work is concerned with psychosocial development, summarization of the work of three of these authors will provide a good indication of this approach to development.

Keniston (1970) is especially concerned with adolescence as a developmental phase, arguing in effect that it should be distinguished from other phases articulated by theorists in this area. The model sets out the "themes" characteristic of this stage and suggests that it is mastery of the challenges they represent that accounts for successful movement to the next stage of development.

Marcia (1964, 1966) is primarily concerned with identity formation, especially among adolescents and young adults. Here, four challenges are seen as paramount: crisis, uncertainty, search and commitment. Their mastery assures confident movement onto the next stage of development.

Probably the most prominent theorist in this area is Chickering (1969) who identifies seven "vectors" or developmental tasks for the adolescent or young adult. These are then divided into three clusters in terms of their sequential salience: establishing competence, managing emotions, and developing autonomy which then leads to establishing identity which, in turn, contributes to freeing interpersonal relationships, establishing purpose and developing integrity. The efforts of young adults to cope with the demands set by these tasks may be influenced by such factors as the size of the institution, the clarity and consistency of its goals, the nature of the student culture, and so on.

4.2 Cognitive Development Theories

Cognitive development theories are rooted in the work of Piaget (1965, 1968). Three central ideas differentiate between cognitive and psychosocial models, namely: the focus of explanation, structure, and invariance. Cognitive theorists, as their name suggests, are concerned with a restricted aspect of human behaviour having some direct bearing on thinking and reasoning. The manner in which individuals organize, perceive and evaluate the world involves a particular unified cognitive structure which, over the life course, is thought to become increasingly complex. Finally, the stages

through which such complexity gradually arises are seen as invariant, hierarchical (with "later" stages subsuming and surpassing "earlier" ones) and universal (that is, independent of such matters as race, culture or historical epoch). In all other respects, cognitive and psychosocial models operate within the same assumptive frame: (1) development is necessarily directional, with movement always towards increasing flexibility and integration; (2) movement between stages is precipitated by dissonance, the conflict between an individual's current reasoning structure and experience of a more advanced structure; (3) such conflict is thought to produce disequilibration, with transition to the "next" stage a search for equilibrium; (4) cognition becomes increasingly based on internal rather than external belief systems; (5) development tends to be continuous; and, (6) development is explicitly associated with qualitative change as the basis for quantitative change.

While a number of theories fall within this family of work, I will restrict my review to the five most prominent theorists, with brief mention made of two additional models which have influenced research and thinking in this area.

Based on more than 30 years work, Piaget (1965, 1970) developed a model of human physical-cognitive development which differentiates between four "eras". Era 1 (age 0-2), that of sensorimotor intelligence, involves six discrete stages, ranging from reflex action to the use of imagery in uninsightful invention. Era 2 (age 2-5), that of prelogical thought, is characterized by "magical thinking". Era 3 (age 6-10), that of concrete operational thought, involves two substages: formation of stable categorical classes, and formation of relations of invariance. Finally, Era 4 (age 11 to adulthood), that of formal operational thought, involves three subphases, the most advanced of which entails true formal thought.

Kohlberg (1969, 1976) is concerned with the development of moral reasoning which is seen as epigenetic in character, that is, moral reasoning is thought to unfold according to some in-dwelling plan. His data derive primarily from the study of some 84 boys over a 20 year period (Gilligan, 1982: 18). The result is a model which he claims has universal application and which distinguishes between three levels of moral development - preconventional, conventional and postconvention - spread over six stages: heteronomous, individualistic, interpersonal, social system, social contract, and, finally, universal ethical principles (cf. Rest, 1979).

Loevinger (1966, 1976) is concerned with ego development, with the ego seen as central to character or personality development, impulse control, interpersonal style, conscious preoccupations, and cognitive style. Development of the ego is conceptualized in terms of a "broken continuum" consisting of nine stages in invariant sequence. The key to developmental progress is the search for equilibrated structure, with mastery of environmental blockages or challenges precipitating movement between stages. Loevinger suggests (1976: 417) that in North America, most adolescents will have reached the level of development between conformist (stage 5) or conscientious (stage 6).

Perry (1970, 1976, 1981), based on longitudinal interview data (n=84) (Loevinger, 1976: 126), posits nine stages or levels of cognitive complexity. In most expositions these are collapsed to four sequential stages: dualistic/absolutist, relativistic, contextual, and reflective/probabilistic. Most recently, Mentkowski and Doherty (1984), based on longitudinal research with female students at Alverno

College (in Milwaukee), have suggested an extension to Perry's scheme to include a performance dimension, that is, how one thinks about a given problem or task is related to what one does (or has done) with respect to it. They also note the tendency for students to undergo cognitive recycling during periods of stress, that is, they tend to revert to an earlier cognitive strategy in an effort to cope with a new challenge.

Closely related to Perry yet distinctive in its own right is the work of King et al. (1984). Their key construct is that of "reflective judgment" derived on the basis of an individual's position with respect to seven qualitatively distinct sets of "epistemic assumptions" such as what can be known, how it can be known and the certainty of the resultant knowing. The result is a five stage model of cognitive complexity, extending from stage 1 where knowing is, for example, absolutely certain, to stage 5 in which there is no certainty except via personal perspectives within a specific context. Research using this model has found that advances in reflective judgment is: tied to age, education and gender; unrelated to verbal capacity; and, shows a common variance with moral reasoning of between 25%-35% (King et al., 1984; Schmidt, 1985).

Two additional models deserve brief mention insofar as the constructs to which they refer show a clear relationship to cognitive development, even though they themselves are not developmental. I am referring to "learning style" and personality "type".

The former refers to the work of Kolb (1981) in which learning style is conceptualized in terms of two orthogonal dimensions: concrete/abstract and active/reflective. The result is a fourfold typology, with each style preference thought to vary as a function of such factors as cognitive complexity, action context, and life stages. Optimal performance by an individual in any given category is thought to result from a good match with the systematically varying demands of different academic disciplines.

The latter refers to the work of Myers (Myers, 1980; Myers & McCauley, 1985) in the development of the Myers-Briggs Type Indicator. Based on the work of Jung (1923), this model asserts that personality type is a function of an individual's position on four dimensions: sensing/intuition, thinking/feeling, perception/judging, and introvert/extrovert. Intersection of these four dimensions yields a 16-fold personality typology. An individual's preference or dominant process on each dimension is given at birth but strengthened through experience. Moreover, each dominant process is tied to its auxiliary process, so that an individual's personality is really a function of the balance on the four constituent dimensions. Research using this model demonstrates systematic variation between personality type and, for example, academic discipline, learning style, burnout and college attrition (Garden, 1985; Kalsbeek, 1986a, 1986b; Kalsbeek et al., 1982; Lawrence, 1984; Provost, 1985).

4.3 Maturational Theory

Maturational theory is more holistic in orientation than the theories I have reviewed thus far. This holds that maturation involves the whole person who, in turn, is seen as composed of multiple, interacting parts. Theorists in this area do not posit stages or phases, but rather view growth and change as continuous, although it may be uneven across various components.

A representative example of this approach to development can be found in the work of D. Heath (1965, 1968, 1977) who suggests that growth involves four "self systems" (intellectual, valuational, interpersonal, and self-conceptual) distributed across five dimensions (symbol use, self-other centred, integration, stability, and autonomy).

Other theorists take a somewhat different approach to maturation. With respect to adult development, this includes theorists such as Levinson et al. (1978), Gould (1972) and Vaillant (1977). Using Levinson et al. for illustrative purposes, these theorists, based on longitudinal interview data with male subjects, hold that adult development is ordered by the "Dream" of mastery and achievement. Towards this end, the tasks of adulthood involve building a "Life Structure" and "Becoming More Individuated". In this context, the individual's relationship to others is subordinated to achievement, although Levinson et al. suggest that increasing mastery should lead to an increased capacity for intimacy and mutuality.

4.4 Typological Theories

Typological theorists seek to categorize or catalogue the characteristic ways in which people perceive and respond to their life situation. Each "typical" position, then, represents a particular constellation or configuration of whatever factors the theorist deems central. Cross (1971, 1976), for example, seeks to characterize the various attributes of what she calls "new students". R. Heath (1964, 1973) is more concerned with temperamental variations based on the interaction between ego functioning and style or temperament. As a result, he differentiates between three personality types: X (non-committees), Y (hustlers) and Z (plungers).

4.5 Models of Student Retention/Attrition

A final area of developmental theorizing concerns the issue of the factors which explain students' tendency to continue on in a given institution until they get their degree (usually four years) or drop out somewhere along the way. With respect to students entering a four year program for the first time, about 60% will drop out at some point, 85% of these voluntarily (Eckland & Henderson, 1981; Hodginson, 1985).

There is consensus among theorists in this area on several matters: dropping out is a multidimensional phenomenon; the **interaction among several variables** is typically required to account for attrition; and several groups of students appear at special risk of attrition, namely, those who are poor, academically unprepared, have uncertain academic goals, are return (adult) learners, or commute to university rather than reside there. Another common attribute of such models is that the notion of interaction is used in a statistical sense - as in the interaction between variables - rather than to describe the social processes that might be involved - as in the interaction between persons in some sort of relationship.

Two models, one widely accepted, by Tinto (1975), the other relatively recent, by Bean (1981, 1985), will illustrate this style of theorizing.

Tinto presents a linear causal model involving six steps or stages: (1) the student's family background (eg. sex, age, social class, grade), their individual attributes, and their pre-college education produces (2) their goals and commitment to the institution they have chosen to attend. Once there, (3) their grades and intellectual development account for (4) their level of academic integration, while their relations with family and peers account for their level of social integration. Both academic and social integration result in personal goals and a level of institutional commitment (5) which, in turn, is used to predict the likelihood of dropping out (6).

Tested recently by Pascarella and Chapman (1983) with 2,326 freshmen from 11 colleges, the model accounted for 13%-17% of the explained variance, with the model incorrectly classifying 25%-30% of students (see also Chapman & Pascarella, 1983; Pascarella & Terenzini, 1983; Pascarella et al., 1983;; Pascarella et al., 1986a; cf. Munro, 1981; Terenzini et al., 1985).

Bean's model is similar in form - a linear causal model - but involves a broader range of variables spread over three steps. Students are initially characterized in terms of a series of academic (performance, integration), social psychological (goals, utility, alienation, contact with faculty, institutional size) and environmental (outside funding, opportunity for transfer) factors (1). This is thought to result in student socialization/selection (grades, institutional fit, institutional commitment) (2) which, in turn, predicts the likelihood of drop out (3). Tested on 1,406 students (freshmen, sophomores and juniors), the model explained between 27% and 47% of the variance.

4.6 Critique and Concept Selection

In assessing this body of work, it is critical to distinguish between the empirical findings presented and the theoretical models through which these findings are interpreted. I have no quarrel whatever with the data. They convincingly demonstrate that such phenomena as cognitive complexity and moral reasoning are real and thus legitimate areas of research. The models, however are a different story altogether, for with two exceptions - temporal relevance and human activity - the models in question violate each of the remaining assumptions in the frame set out above. This makes these theories highly vulnerable to criticism. Full explication of such a critique is beyond the scope of the present paper. However, six representative areas of weakness will illustrate the thrust such a critique would take.

First, the models in question are problematic with respect to the issue of differentiation versus integration. Both Gilligan (1982) and Kegan (1982) note in their separate reviews that extant developmental theories exalt differentiation at the expense of integration. Such an emphasis they argue, and I fully agree, is arbitrary and unwarranted. Indeed, it presents an emotionally impoverished image of the ostensibly mature individual, full with his achievement but distant from all others in his social world. Rather, a more useful image of individuals who have achieved maturity are those who have evolved a balance between the two, between a focus on the self and a focus on relations with others.

Second, the models in question are problematic with respect to the issue of gender. As Gilligan (1982) in particular points out, the majority of the models under consideration are based on the

experience of male subjects exclusively. The possibility that female subjects might have provided quite a different perspective on human development was not considered. Yet that was precisely what Gilligan found in her own research concerning moral reasoning. Whereas her male subjects, in accord with the logic of Kohlberg's model, emphasized the formal (ie., generic) application of rules, her female subjects focused on the contextually specific applications of such relational considerations as mutual obligation, responsibility and caring. Judged against the male bias which Gilligan suggests inheres in Kohlberg's model, her female subjects were rated a full stage behind their male counterparts. In contrast, Gilligan argues that neither the male nor the female "voice" is any better than the other, only different, offering a complementary perspective on the issue of moral reasoning. Just as women may benefit from the separateness of men, so men may benefit from the togetherness of women. In short, on this evidence, there is good reason to think that claims as to the objectivity and universality of the models in question are spurious. If this is so with respect to the issue of gender, it may similarly be true with respect to such additional dimensions as ethnocultural identity and/or social class.

Third, the models in question are problematic as regards affective expression. While these models provide a fully elaborated and detailed picture of the range of cognitive skills and abilities, it remains unclear how these relate (if at all) to affective expression seen as an equally important facet of human experience. Indeed, a reasonable corollary to the communication theorists' dictum - one cannot not communicate - is that one cannot not feel (Benjamin, 1982). Thus, the near total absence from these models of affect is a serious flaw.

Fourth, a further problematic area concerns the notion of continuity. Whether explicit or implicit, most of the theories examined make the claim that development is relatively continuous, that past states affect future potentials, and that serious disruption of development during a previous stage or phase will seriously interfere with developmental process during some later stage. The problem with such claims is that they have simply not been verified empirically. In a review of a series of longitudinal studies, Benjamin (1980) shows that events in childhood are in fact extremely unreliable predictors of development later in life, with major change quite possible even in the late 20's and 30's. Finkelhor (1984) makes the identical point with respect to the longitudinal consequences of childhood sexual abuse, adding that much of the theorizing about such effects appear to be adults' notions about how children would be expected to respond to such trauma. Further, Offer and Sabshin (1984) argue that much of the debate around the issue of continuity versus discontinuity appears specious because evidence for both processes exists but with respect to different variables and time frames. For example, they observe that such variables as IQ, temperament and activity/passivity are highly unstable through time among children, but that self-concept, verbal/mathematical ability and cognitive ability are all relatively stable among adults within specific historical and generational contexts. This suggests that much of the evidence in support of the theories reviewed above is less a function of the validity of their picture of human development than of careful attention to variables consistent with the model and equally careful inattention to variables inconsistent with it.

Fifth, each of the theories reviewed above claim that there is one and only one route of individual development through the life course. While individuals may deviate from that route - for example, fail to master the tasks of a given stage - these are invariably treated as exceptions which prove the rule. There is good reason to think, however, that these models are the product of highly selective thinking and that studies not tied to verifying or disconfirming any given model may yield quite different results. Such was the case with Offer and his colleagues (Offer, 1969; Offer & Offer, 1975; Offer et al., 1981) who studied a sample of white, middle class adolescent boys (n=73) over a ten-year period, from age 11 to age 21. Their results revealed **three** distinctly different developmental pathways. Continuous growth boys faced no developmental crises whatever. Development was smooth, untroubled and untraumatic. Surgent growth boys faced some hardship. Parent-child conflict was in evidence, as was death, divorce and mental illness. Development took the form of a series of spurts. Finally, tumultuous growth boys faced an unending series of crises, with life for them in apparently continuous turmoil. Behaviourial and emotional patterns in evidence in mid-adolescence had not changed by age 21. These variations notwithstanding, the social functioning and adjustment of all three groups of boys were within the **normal range**. The authors conclude that the notion of transitional periods so important to development theories are more ideological than real, with adolescence no more a "transitional period" than any other period of life.

Finally, the models in question are most problematic as regards the issue of interpersonal interaction. Most of the theories noted above make either explicit or implicit reference to interaction between the individual and the environment as a primary impetus to development. This is reflected in notions of blockage, tension, challenge or mastery. Examination of these concepts, however, reveals that in all cases the environment for these theorists is grey and featureless. No distinction is made between the physical or social aspects of the environment, and one gets no sense that the interactional process is in fact reciprocal; that is, while the demands of the "environment" shape the individual, the individual is not seen to have a similar effect on the environment, and in particular on those significant others which comprise the "environment". The result, as Spiegel and Bell (1959) have observed with respect to the work of the noted psychiatrist Harry Stack Sullivan, is that what these theorists appear to mean by "interaction" is a cognitive and affective process **inside the individual's head** and **not** interaction with any living, breathing human beings. In a similar vein, Kegan (1982: 115), in an extraordinary statement unique (as far as I am aware) in this literature, virtually indicts the very models on which he himself builds:

> [Existing models see development as] something a person does alone, or, even worse, something a person does "inside himself" or "in her own head".... If categories like 'impulses' and 'needs' are to be taken as environmental contexts from which the person differentiates when he evolves, then 'the environment' is at best an internal psychological environment; it doesn't seem to involve a real world of people and social arrangements.... One of the most powerful features of (my) psychology, in fact, is its capacity to liberate psychological theory from the study of the decontextualized

individual." (Parentheses added).

In light of this insight, Kegan (1982) attempts nothing short of a radical reformulation of developmental theory. The central dimension on which this rests is the relationship between self and other. As a function of variation in this relationship across the life span, Kegan posits six developmental stages - stretching from the incorporative (in which the infant cannot distinguish between self and other) to the interindividual (in which the individual achieves a balance between self and other in which both are respected) - which unfold in the form of a spiral or helix. This attention to the self is then balanced with concern for relations with the other expressed as three functions: confirmation (holding on), contradiction (letting go), and continuity (staying put for reintegration). In each stage, Kegan suggests a different self-other balance as appropriate.

This is a brilliant effort and nearly surmounts the disciplinary bounds of psychology. But not quite, for while the model is rich and elaborate as regards the evolution of the self, relations with the other remain **p-centric**, that is, they are seen from the perspective of the self and in terms of how they advance development of the self. What is missing is an equally rich portrait of the processes whereby such relations become organized, emerge as more complex than merely the sum of the two (or more) personalities in question, and, in turn, reciprocally shape and change the developing self of all participants.

These criticisms suggest that while the models in question may be rejected, the conceptual domains they seek to explicate remain as fruitful as ever. Put differently, this is to affirm the reality of developmental growth, change and maturation. It follows that any reformulation will need to attend to processes such as the development of cognitive complexity, moral reasoning, reflective judgement as well as clarifying purpose, cultural perspective, belief systems, identity formation, interpersonal relationships, and physical well being.

As for the models of attrition/retention, they stand out more for what they omit than what they include. Concern for demographic variables (eg. age, sex, social class, race/ethnicity), year of study, individual goals, individual commitment, grades (as an index of academic performance), relations with family, peers and faculty, and institutional size all seem intuitively reasonable variables to include in any reformulation. There are, however, two glaring weaknesses with this list. First, given a complex organizational literature (see below), it is remarkable that these theorists should have fastened onto a variable with the least substantive content - institutional size - and which, not coincidentally, is the easiest to measure. Exactly how this relates to student experience or, even more important, organizational functioning, is anything but clear. Second, and similarly, their notions of relations with family, peers and faculty also appear restricted to non-substantive matters, namely, the simple frequency of contact. What such relations mean, how they are organized or patterned, what consequences such patterning may have for relations with any other social group or for adaptation to the university as a social context remains obscure. The significance of these variables for purposes of reformulation is twofold. First, they call attention to processes in which the individual student may take a position that

may or may not be congruent with the position their family may wish them to take. Such consensus or descensus may help explain their experience of the university in general and their propensity to stay or leave the university in particular. In the same vein, such views may make it easier or more difficult to form relational bonds with others present in the environment - peers or faculty - with much the same result.

Second, these variables highlight the potential significance of the university not merely as a 'learning environment' (Conyne, 1986; Rodgers, 1986), but also as an organizational one. While the former focuses on the experience of students, the latter suggests that the experience, perceptions, intentions, and patterns of interaction of and among university faculty and staff may be equally important from the perspective of explanation and prediction. I will pursue this notion further in the next section.

5.0 DEVELOPMENTAL THEORIES OF INDIVIDUAL-ENVIRONMENT INTERACTION

A third approach to apprehension of the university as a learning environment concerns the study of the interaction between that environment and the students who operate within it. Reviews of this literature may be found in Conyne and Clack (1981), Banning and McKinley (1980), Huebner (1979, 1984), Paul (1980), and Walsh (1978).

Ordinarily, I would now proceed to review the various theories which constitute this approach. However a substantial digression is first in order to note and explore what I regard as a critical lacunae in this literature. I am referring to the university as organization or, even better, as a complex social service system. With the possible (and only partial) exception of Moos (1973, 1974), such a view of the university is literally absent from this literature. Indeed, even Moos only treats the university as organization as one of three equally salient dimensions in the assessment of "social climate" (the other two are 'personal' and 'relational').

Such an omission is remarkable and, I believe, indicative of the extent of the parochialism evident in this literature. As the extensive reviews of Clegg and Dunkerley (1980) and Perrow (1979) attest, the organizational literature represents over 100 years of scholarly investigation. Such efforts shows that the organizational context not only potently affects relations among organizational members (eg. staff, faculty), but also shapes the nature of the services provided to its clients (eg. students). Nor is this and similar insights unknown in the higher education literature per se. Indeed, a journal, 'Educational Administration Quarterly', is devoted to such matters exclusively. That such a body of knowledge should not have penetrated awareness of those concerned with individual-environment interaction, as it appears not to have done, points to a glaring weakness in this literature. Accordingly, in what follows, I divide this section into two parts. The first part will briefly review major organizational theories, while the second will do the same for individual-environment theories. As always, my aims will be the same, critique and concept selection.

5.1 Theories of Complex Organizations

Following Clegg and Dunkerly (1980), theories of complex organizations fall into six groups, categories or families. Given the size of this volume - 555 pages, bibliography and index excepted - what follows will of necessity constitute nothing more than a brief glimpse.[3]

5.1.1 Formal Theory. Formal theory is primarily associated with one of the fathers of modern sociology, Max Weber (1948), and is represented in his theory of bureaucratic organization. In essence, this treats the hierarchical organization as a monolithic entity governed by (1) technical rationality, a cognitive and managerial style concerned with efficiency, (2) a set of positions, in which (3) the behaviour of position incumbents is governed by a set of formal, administrative rules, what Weber calls the "structure of dominancy". The theory takes its name from its central thrust which posits that human relations within bureaucratic organizations are structured by formal rules whose function is to maximize productive efficiency. Such a portrayal was not one of which Weber approved. Indeed, he was among the first to call attention to the dehumanizing potential of this form of human relations. Nevertheless, he was prophetic in predicting that such an organizational structure would come to dominate Western capitalist societies.

This approach to understanding organizations lives on in the scientific management movement developed by Taylor (1911) in the early years of this century which emphasizes total managerial control in pursuit of maximum productive efficiency. Indeed, it was in part in response to such effects that the union movement was born.

5.1.2 Typological Theory. A number of efforts have been made to create typologies which differentiate between organizational types in terms of dimensions thought to be central. This has included: the question of who benefits from particular organizational arrangements (Blau & Scott, 1963); the issue of power and control (Etzioni, 1961); the distinction between formal and informal types of interaction (Blau, 1956); and, who makes and legitimates the rules (Gouldner, 1954).

As the dates on these references indicate, this approach to theorizing has generally fallen out of favour. It nevertheless made an important contribution, for it suggested, in contrast to formal theory, that individuals are not automata, that rules can never cover all contingencies, that organizations generate informal groups, that bureaucracies are anything but monolithic, and that individuals often need to be decision-makers (and not just follow orders).

5.1.3 Contingency Theory. This approach to organizations essentially posits that while organizations can be understood in terms of a handful of central dimensions, their relative salience or configuration will be a function of various situational contingencies (Lawrence & Lorsch, 1967; Pugh & Hickson, 1976). The dimensions in question are: specialization, standardization, formalization, centralization, and configuration (authority structure). It also explained organizational variation in terms of three key factors: size, technology and location. The importance of this approach was that it

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[3] *This review omits such special problems as organizational goals, power, gender, and the role and salience of technology.*

suggested that there was no such thing as an optimal organizational structure, but rather that organization-environment 'fit' was constantly changing and thus involved a series of strategic choices. It is important to note, however, that this is an ideal-typical model, that is, its central assertions describe the way organizations **should** behave, not necessarily how they actually **do** behave in real life.

5.1.4 Action Theory. Action theory seeks to explain human behaviour in organization settings in cognitive terms (March & Simon, 1958; Weick, 1969). In this sense, their orientation is clearly social psychological. The essence of this view is that human decision-making in complex organizations seldom adheres to any pure model of rational action. Rather, the contingencies are typically so great and the range of options so wide that "bounded rationality" is the norm. The result is "satisfying" by which decisions are made that yield satisfactory but not optimal results. These theorists, especially Weick (1969), also take into account the strength of the relations between organizations in terms of his notion of "coupling", with most complex organizations showing evidence of "weak" coupling.

5.1.5 Interorganizational Theory. A number of theorists have argued that organizations do not operate in a vacuum, but rather routinely interact with and respond to organizational contingencies in their environment. Here, a variety of theoretical approaches may be distinguished, depending on the central dimension to which they call attention. Thus, Emery and Trist (1965) focus on the "causal texture" of the interorganization field, Aldrich and Pfeffer (1976) speak of "natural selection", Lawrence and Lorsch (1967) and Aldrich and Mindlin (1978) discuss information exchange, Child (1972) examines organizational relations in terms of political economy, while Benson (1978) speaks of interorganizational networks.

Whatever the orientation, the value of this body of work lies in the attention it calls to the larger context - the environment - within which all complex organizations operate, with the interaction between organization and environmental others having the potential to change both in the process.

5.1.6 Systems Theory. Finally, a number of theorists have sought to explain complex hierarchical organizations in terms of the relations among and between its constituent parts or components. It is important to note, however, that there is at present no consensus concerning the definition of 'system' nor any one version of systems theory. Rather, there is a loosely related family of theories which falls under its rubric. Thus, structural-functional theory (Parsons, 1951) is concerned with factors basic to system maintenance, integrity and continuity. Merton (1940) focuses on identifying various sources of systemic dysfunction. Gouldner (1959) differentiates between "open" and "closed" systems, with formal theory, for example, used to illustrate the latter. Katz and Kahn (1966) develop a social psychological model based on the notion that all organizations involve some variation of input-throughput-output.

Recently, Benjamin (1986) has attempted a radical critique and reformulation of a systems approach to complex organizations. The central idea concerns the object of inquiry. Heretofore, he suggests, systems theorists have either focused on a personified vision of the organization (eg. feelings, aspirations, individual goals) or on relations between abstract variables within it (eg. roles, resources). Both approaches distort through reification. Organizations are **not** persons nor can roles interact.

Rather, organizations are abstractions constituted out of the interaction among and between its human members. Similar logic applies to the relations between organizations, for this too is constituted out of the patterned interaction among humans operating as organizational representatives. Consequently, he argues, organizational processes can be adequately explained in interpersonal terms, and using key concepts such as pattern of interaction, level (of meaning, affect, interaction), hierarchy, and context. Thus, for example, organizational goals are not to be found in formal prospectuses, but rather emerge out of the interaction among organizational members, with different subsystems often characterized by divergent organizational goals. The obvious link between such concepts and their dual application to organization and family systems also suggest a link between family and work, with Benjamin positing a reciprocal although often unequal, relationship between the two. Parenthetically, this is consistent with Reiss (1981) who presents evidence to the effect that, as a function of their family paradigm, families both select and influence the organizations with which they regularly come into contact (see also Schwartzman, 1985).

5.1.7 Critique and Concept Selection. The salience of this body of theory is threefold. First, it calls attention to the university as a complex organization that cannot and should not be dismissed or simply treated as just another in a set of variables. Rather, the organization of the university should be expected to shape in important ways not only how staff and faculty relate to each other, but also how they perceive and interact with students. In other words, the university as organization should be regarded as a major factor in explicating student experience.

Second, the organizational character of the university cannot be taken as given nor can it be seen merely as an effect with which students must somehow cope. Rather, in keeping with the assumptive frame set out above, the relationship between university and student should be seen as reciprocal. Indeed, even this way of stating the process lends itself to distortion, for neither the university nor the student body are amenable to conceptualization in monolithic terms. Rather, in keeping with Benjamin (1986), both the university and the student body should be seen as constituted out of multiple subsystems in which relations within and between its members will be organized or patterned.

Finally, such a conception makes plain that the university as organization cannot be adequately described in terms of any given summary statistic or collapsed into an 'organizational' factor. Rather, its explication will require careful and detailed study. In turn, this points to two critical weaknesses in the theories reviewed above as well several variables whose inclusion will be useful for purposes of reformulation.

Renihan (1985) suggests, and I agree, that a central problem with existing theoretical formulations is their determined effort to oversimplify the complexity of organizational systems. The result is a series of dichotomies that are more misleading than helpful. Distinctions such as task-oriented versus person-oriented, resource-rich versus resource-poor, formal versus informal social structure, and so on, all seek to reduce complex processes to neat, operational formulas. The problem with this approach is that it seldom works 'on the ground'. Benjamin (1986), for example, found that

professional designations such as 'social worker' or 'lawyer' were poor predictors of the behaviour of people carrying them. Rather, behaviour varied systematically as a function of the context in which interaction occurred and of the character of the relationship of the persons in interaction.

A second area of weakness has already been alluded to, namely, the tendency to either anthropomorphize organizations or to abstract them to the point where they become unrecognizable to the members who comprise them. Neither is an accurate picture of reality, namely, that organizations are quintessentially social. Take a given university community and magically transport it to the Gobi desert and you still have what essentially makes it a university. Look back at the buildings they have just left and all you have is a set of abandoned buildings, with nothing to mark them off as a 'university'. This suggests that conceptualizations of universities as complex organizations should reflect this social character and, in addition, do so in terms recognizable by the members out of whose relations it is constituted.

On the one hand, this suggests that many of the variables already selected out with respect to the family - as a complex social system - will retain their salience with respect to the university - as a complex social service system. Thus, notions of pattern, level, subsystem, environment, and context will still be theoretically useful. On the other hand, universities differ from families at least in terms of the order of complexity involved. Whereas the average family may have four members, the average university may have 10,000, several hundred of them, faculty and staff combined, formally members of the university organization proper. Here, notions of emergent organizational goals, interorganizational coupling and hierarchy may prove useful. Benjamin (1986), for example, found that patterns of interaction among organizational members varied systematically within and across hierarchical levels as well as across organizational systems.

The importance of these variables for purposes of reformulation is that they make clear that the university as organization deserves careful and systematic study in its own right, and not merely as a featureless "environment" with which students are purported to "interact".

5.2 Theories of Student-Environment Interaction

This brings me to theories explicitly concerned with student-environment interaction. Here, six theoretical approaches may be usefully distinguished as representative of this approach.[4]

5.2.1 Physical Environment. Several theorists, most notably Barker (1968) and Steele (1973), conceptualize the physical structure of the university as a causal agent in shaping student behaviour. Such approaches treat the environment in objective terms under the assumption that physical settings impose patterns on people who inhabit or at least frequent them. Barker, for example, distinguishes between settings in terms of their size, and thus their capacity to accommodate a given number of

[4] *Others that might have been included in this subsection include Banning (1980), Blocher (1974, 1978), and Rappoport (1977).*

students. His findings typically show that persons in small settings tend to be more productive, involved and satisfied than those in large settings.

5.2.2 **Subculture.** Clark and Trow (1966), in contrast, are more interested in culture than physical setting. They assume that individuals will tend to be attracted to groups which express their common interests in characteristic ways, thus constituting a subculture. Once in place, the subculture becomes coercive in the sense that norms are established with which members are expected to conform. The authors differentiate between four student subcultures: academic, non-conformist, collegiate and social. From their perspective, the environment is constituted out of those groups of students which collectively assemble to produce the subculture.

5.2.3 **Personality.** Holland (1973) assumes that students can be classified as belonging to one of six distinct personality types: realistic, investigative, artistic, social, enterprising or communicational. Persons in each type will select a model environment most in keeping with their personality. Given a good "fit" between the two, they are likely to be highly productive and quite satisfied. The opposite will be true when the "fit" is poor.

5.2.4 **Needs.** Stern (1970) assumes that students can be described in terms of some 30 different needs (eg. for affiliation, achievement, etc.) as inferred on the basis of their behaviour. Student behaviour is then explained in terms of the interaction between these needs and the demands - in his words, the "press" - placed on the individual by the social environment defined in terms of the group to which the student in question belongs.

5.2.5 **Social Climate.** Following Murray (1938), Moos (1973, 1974, 1979) takes yet a different approach, arguing that each environment can be characterized along specific dimensions to provide some sense of a given university's "social climate". This assumes that the way a student perceives the environment will influence their behaviour in that environment. In this model, three dimensions are accorded salience: personal attributes (eg. competitiveness), interpersonal relations (eg. affiliation), and organizational attributes (eg. order). These dimensions were selected empirically, based on surveys of large numbers of students in diverse settings and have, in turn, been used to develop typological categorizations of these settings, most notably that of residence halls and classrooms (Moos & Lee, 1979; Moos, 1979). Based on an extensive review of the relevant literature, Anderson (1982) argues that Moos' conception of "social climate" is too narrow and that variables should be drawn from four domains: ecology, milieu, social relations and culture. In a similar review of data pertaining to the physical environment of schools, Weinstein (1979) also argues for a broader focus than is found in Moos' view of the classroom environment.

5.2.6 **Ideal Self.** Finally, Pervin (1968) argues that persons continually seek to achieve their ideal self. Some social environments will facilitate movement of the person towards that ideal whereas others will have the opposite effect. On the assumption that a discrepancy between the ideal and the environment is painful, Pervin suggests that the greater the congruency ("fit") between the ideal self and the environment, the greater the likelihood the person will perform well and report satisfaction.

5.2.7 **Critique and Concept Selection.** The central idea underlying this literature, that student experience arises out of interaction between the individual and the environment, is hardly novel. Rather, it dates back to 1936 when Lewin first suggested his now famous formula: B = f (P, E); that is, behaviour (B) is a function of the interaction between the person (P) and the environment (E). On the one hand, this view is generally consistent with the assumptive frame set out above. On the other hand, this conceptualization is also its central weakness, for in most of the theories reviewed above interaction is more illusory than real.

In the work of Barker (1968) and Steele (1973), for example, only the physical environment appears real, with the humans inhabiting it a grey faceless mass. As a result, the nature of causality is both linear and directional, **from** the environment **to** the students and **not** in any way reciprocal. Thus, any sense that students might seek to alter their environment or that they would likely vary in how they perceive, experience and interact within it is disregarded. Similarly, their findings are subject to reformulation in interpersonal, not environmental terms, for example, small group size is more satisfying because it promotes relationship formation. This said, these authors make a valuable contribution by calling attention to the objective character of the environment. Heat, cold, crowding, distance, these are all features of a university campus which may directly influence behaviour, although the suggestion that these variables are somehow **the** determinant influence - as opposed, for example, to any characteristics of the students in question or of their interaction - does not seem reasonable.

The opposite problem concerns theories more phenomenological in orientation. Students are said to have clear definitive interests such that they "naturally" sort themselves out into subcultures. Where these interests come from, how the sorting out process gets played out and how investment in a given subculture is maintained are all left to the imagination of the reader. Similar questions - with identical results - might easily be addressed to personality, "needs x press", and ideal self theories. Since answers to these very questions are central to the assumptive frame set out above, I suggest that these theories are in fact interactional in name only.

The work of Moos (1973, 1974, 1979) comes somewhat closer to interaction in the sense that I use the term. Whereas other theorists are content to treat the university student in social isolation, Moos at least acknowledges that family and peer relations may still be important (see also DeCoster & Mable, 1981). Whereas others focus exclusively on the immediate social environment with which students have direct contact, Moos affirms the reality of the university as an organization, at least with respect to existing rules and regulations. This said, Moos' work remains deficient from the perspective of the assumptive frame in terms of the absence of process. For example, given a particular university organization, how is this maintained or changed over time and how does it impact on students **independent** of their **perception of it**? If student-faculty peer relations are important, how are they created, sustained, or changed, and how do they contribute to student involvement (see Erkut & Morris, 1984)? Answers to or even interest in questions such as this would contribute to an awareness of process. Their absence suggests that Moos is using interaction **not** in the sense of persons inter-

acting together, but rather in the statistical sense of "interaction effects" (see Sirotnik & Burstein, 1985). This is not consistent with the assumptive frame.

It follows that the only variable which might fruitfully be included for purposes of reformulation is that of physical environment. In particular, the extent to which the environment -say, of student residences - does or does not promote relationship formation appears especially interesting. In accord with Barker (1968), the importance of this variable is that it suggests that the physical environment, while perceptions of it may vary widely, nevertheless has an objective existence that can be consequential for social interaction.

6.0 SUMMARY AND REFORMULATION

Developmental theories of student life are in crisis. Theoretical diversity, substantive parochialism, and non-commensurability have either rendered them moribund or forced staff to select among them arbitrarily, based on their own particular preference. On the assumption that theoretically-guided action is better than ad hoc selection, the purpose of the present paper is to create a theoretical reformulation that will be useful for both policy and research.

Towards that end, an assumptive frame was selected as a basis for critical evaluation that was sufficiently abstract to overcome the problem of non-commensurability. This involves six assumptions: relational entitivity, circular causality, holism, activity, dynamic change, and temporal relevance. These assumptions are fully consistent with a developmental perspective and are congruent with General Systems Theory as a generic metatheoretical ground for the present work.

This assumptive frame was then used to critically assess four bodies of theory concerned, respectively, with developmental models of the family, the individual, complex organizations, and the interaction between the individual and the environment. In each case, central concepts were reviewed, then critically evaluated in light of the assumptive frame. Those concepts which appeared useful for purposes of reformulation were selected out. These variables are collected together under the family of theories from which they originated in Figure 1.

In what follows, I use these concepts to reformulate a **process model of student development.** This is presented in two complementary forms, first in the form of a series of flow models (Figures 2, 3, 4, 5), and second in the form of discursive description supported by brief review of relevant literature.

6.1 Key Components

A reformulated process model of student development involves a number of key components. These are set out in Figure 2. What is immediately apparent is the radical difference between this and existing models. These include the following: (1) the family member who enters university is seen here in social context, that is, they come to the university from a family system characterized by specific

Figure 1. Selected Concepts

Family	Individual	Organization	Environment
interaction	developmental	size	physical
- coherence	domains	emergent goals	
- adaptability	age	hierarchy	
- coalition	year study	pattern	
- boundary	goals/	- interaction	
affect	expectations	- affect	
meaning	academic skills	- meaning	
- configuration	sex	faculty	
- coordination	staff		
- closure		subsystem	
demand		context	
preparedness		environment	
discrepancy		coupling	
chance			
social class			
race/ethnicity			
work pattern(s)			
environment			

patterns of behaviour and with on-going ties to other members; (2) the family is itself embedded within an environmental context with which it is in reciprocal interaction; (3) the university is similarly organized in systemic terms; and (4) it too interacts with an environment, with reciprocal consequences for "both"; (5) movement, however temporary, from family to university involves a significant change of status, from adolescent (in the family of origin) or adult (in the family of procreation) to "student", with potential consequences for their family of origin, for example, in terms of a shift in meaning or perhaps increased demand as the "student" operates as an ambassador of change, importing new ideas and information into the family system; and, (6) finally, the relationship between the "student" and the university takes place through time, symbolized by the letter "t", and thus is intended to imply the potential for developmental change of those patterns of interaction which had heretofore typified the student and, indirectly, relations between the adolescent/adult and his or her family. Thus, the model is not only sensitive to context and process, but is also intended to suggest an iterative linkage between the two in the form of change through time.

Figures 3 and 4 explicate the main components noted above, while Figure 5 concentrates on their interaction through time within the university context.

Figure 2. Key components in a process model of student development.

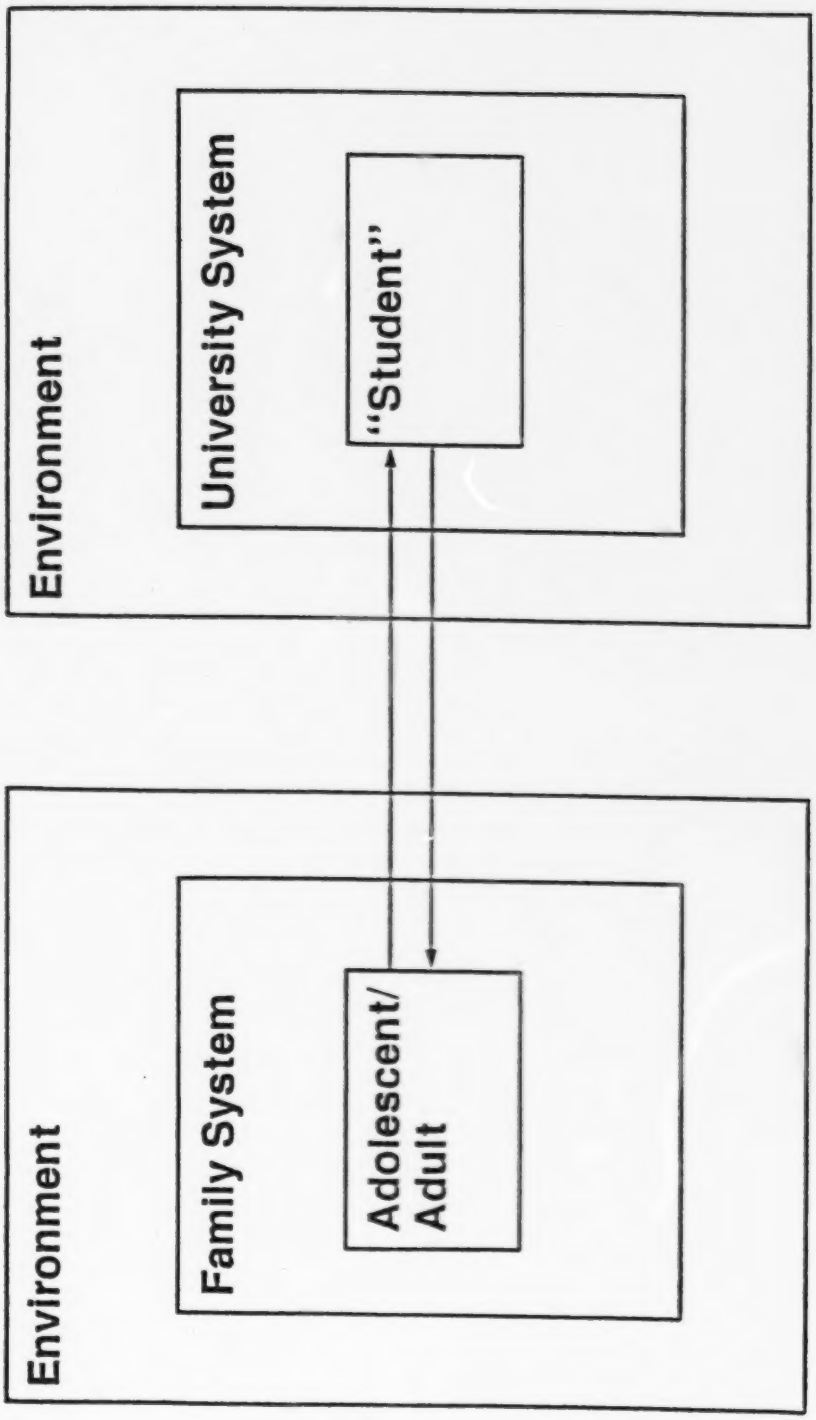
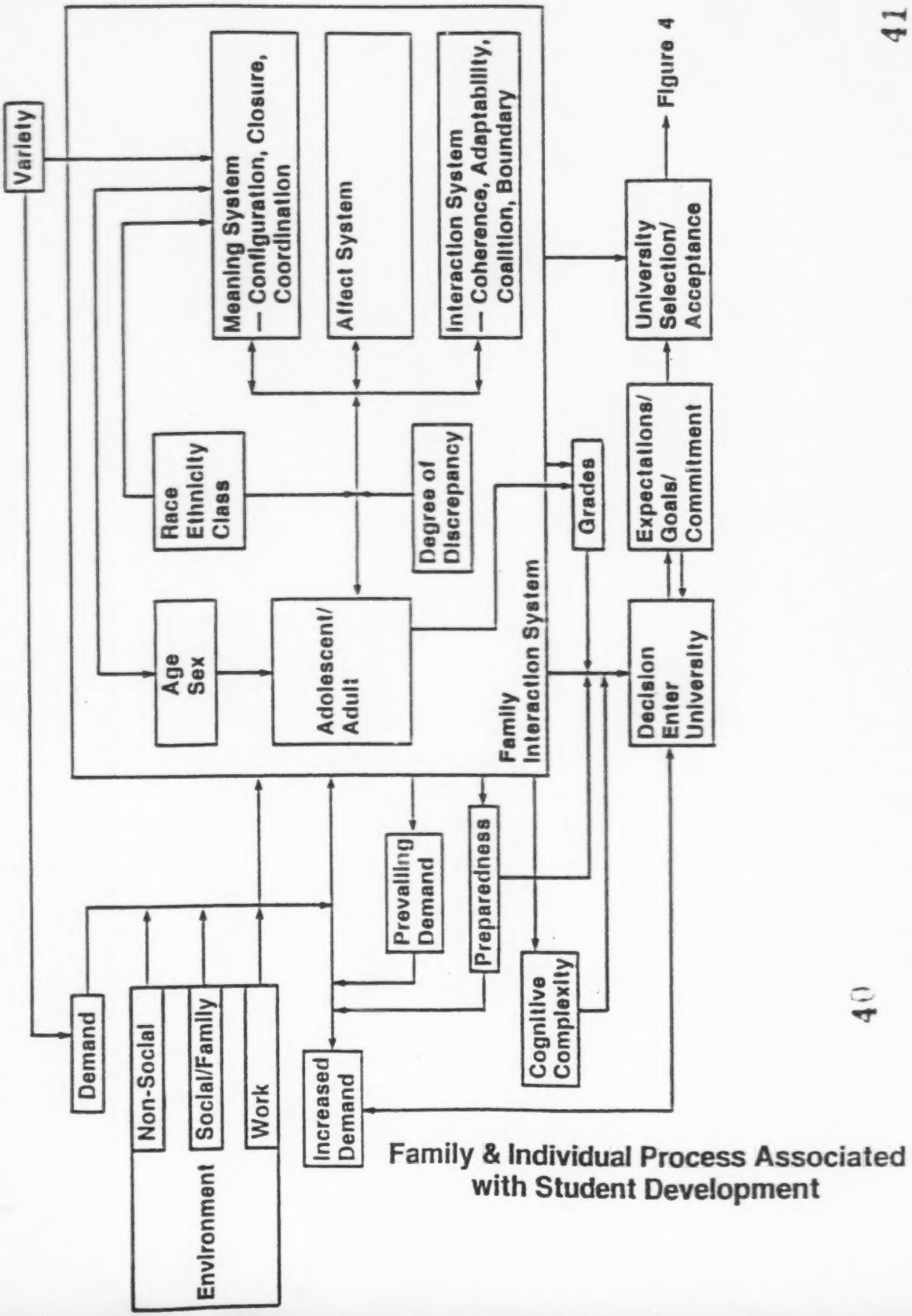


Figure 3.



Family & Individual Process Associated with Student Development

Figure 4. University-Student Interaction

6.2 Family and Individual Processes

In Figure 3, I suggest that family life can be explained in terms of the interaction between the family interaction system, the specific attributes of the adolescent/adult (soon to be "student"), and the character of the environment in which they live, with the notion of demand linking them together. The family interaction system emerges primarily out of the patterns of meaning, affect and interaction which characterize each family. Families, however, are not homogeneous masses. Rather, variation in the specific characteristics of each member can alter or shape the larger whole, hence concern for the age and sex of the adolescent/adult. Family patterns also appear to vary with race, ethnicity and social class. Finally, patterns of meaning, affect and interaction may exhibit varying degrees of discrepancy in relation to each other, with "high" discrepancy typically associated with increased demand.

A second source of influence concerns the environment in which the family lives. Here, three sources of environmental influence may be differentiated. The non-social environment refers to events and processes in the community, including its spacial or architectural arrangement, the availability of employment, the price structure for goods and services, and so on. The social environment consists of those people with whom family members come into routine contact, including extended kin, peers and neighbours. Finally, the work context may be an especially potent source of environmental influences, as patterns of interaction at work influence patterns of interaction among family members.

A third source of influence derives from the interaction between family and environment in the form of demand or stress. A wide variety of events, both negative (eg. a cut finger) and positive (eg. an enjoyable meal), represent sources of demand, hence reference to the family's prevailing demand. At any point in time, this may vary from high to low. Further, the extent to which family members are prepared for such events will influence their capacity to cope with and adapt to them. At the same time, however, patterns of interaction, events in the environment as well as chance occurrences (variety) all contribute to periodic episodes of increased demand.

One such event is the decision that an adolescent/adult member enter university. Such a decision is based on a range of factors: prevailing demand, preparedness, demonstrated ability (grades, cognitive complexity), the goals and expectations of family members, the availability of fiscal resources to meet the increased demand, and the patterns of interaction which characterize the family in question. The result of a positive decision to enter university is the selection of and acceptance by an institution of choice.

In this context, there is reasonable although not extensive evidence that the adolescent/adult-family link may already have set part of the stage for what will happen upon university entry before they have even left home. With respect to adolescents, for example, there is clear evidence of a relationship between parental expectations, occupation and drinking behaviour and adolescent plans for college (Davis, 1977-78), their academic major (especially among males) (Kelly, 1976), and their later propensity to drink (especially in the first two years)(Berkowitz & Perkins, 1986). In addition, Bell (1985) suggests that students who have a relatively close relationship with their parents will tend to be socially competent in university and exhibit a positive self-regard. On the basis of Kelly's (1976)

findings, noted above, the fact that career aspirations are among the key reasons reported for going to university (University Outcome Survey, 1983) may also be linked to family ties. Family expectations, while they may work in a positive direction, may alternatively place the student at high risk for crisis, including suicide. Held and Bellows (1983) found that family expectations stressing success often placed the student in an impossible situation for which suicidal ideation or attempted suicide was the solution. Finally, there is some evidence to suggest that the selection of a university may involve congruence between family patterns and patterns perceived to be present in the institution of choice (Reiss, 1981).

As for those who enter university as adults or return as adults, the influence of family relations is again evident. For example, Van Meter and Agronow (1982) and Berkove (1979) found that returning women who do not receive support from their husbands not only tend to be under great stress, but are at higher risk of failing than those who receive such support. Similarly, Kelly (1982) reports that family support of the decision to return to university was positively related to the student's grades. Further, the decision to live in residence or commute from home seems clearly linked to various family characteristics. Chickering (1974) found that residential students tend to conform with the standard university student stereotype: they tended to be young, single, not working, came from a middle class background, had college educated parents at least one whom of worked in a professional or managerial capacity and who had similar expectations of their university bound adolescent. The move to residence marked a sharp break between these adolescents and the immediate influence of their family and high school peers. In contrast, commuter students tended to be older, were often married, were often employed, came from a working class background, had parents with no university training and who often felt threatened or ambivalent about having a child in university. For these adults, commuting to university involved relative continuity in their relations with parents and friends (see also Carnegie Foundation, 1986; Pascarella, 1984; Welty, 1976).

6.3 Organizational Processes

The university too is seen (Fig. 4) here as having systemic characteristics. As such, the counterpart of the family interaction system is the university interaction system. Thus, among staff and/or faculty members who interact on a routine basis over time, it is hypothesized that observable patterns of meaning, affect and interaction will arise. Unlike the family, however, it is critical here to specify the subsystem and/or hierarchical level of the participants in question, since it will be expected that the patterns in question will vary considerably, for example, between relations among administrative personnel as opposed to those among the maintenance staff. Similarly, the patterning of relations across hierarchical lines - say, between maintenance staff and faculty - will also be expected to vary. Whatever the pattern in question, variation in the degree of discrepancy between types of patterns will be expected, with such variation associated with increases or decreases in demand.

Furthermore, like families, university systems operate within a particular environment. Non-social components include, for example, the availability of required funds for academic programming. Social components involve relations with staff and faculty in other universities - designated here in

terms of the closeness or distance of coupling - as well as relations with others who have a direct interest in university affairs, for example, staff of the Ministry of Education responsible for the provision of funding resources. Such relations may provide an important source of support in the face of rising demand.

Both relations within the university and relations between the university and the environment will involve some degree of on-going demand. This is thought to vary from high to low over time. Similarly, events will occur from time to time which involve an increase in demand, for example, a change in relevant statutes or in funding arrangements or a decline in student enrolment. It is out of the interaction among these various processes that the university's goals will emerge. Such goals refer both to what members of various subsystems intend to do as well as how they actually behave in accord with the pattern characteristics of that subsystem.

Of these various hypothesized organizational relations, few are presently represented in the extant literature. Of those concerns that are addressed, most are viewed from a "traditional" perspective, that is, one concerned neither with process nor interpersonal interaction. At the organizational level per se, for example, concern with organizational effectiveness (Scott, 1984) and its corollary, sources of organization fault (Cameron, 1984; Coombs, 1968), are commonplace. As regards relations among and between specific subgroups, the best that is available concern, for example, sources of stress among faculty and professional staff (Ghelch et al., 1985; Brown et al., 1986a, 1986b), faculty attitudes and expectations (Faculty Opportunity Survey, 1985), the distribution of financial resources across specific student groups (Mehmet, 1979) or shifts in the demographics of university student populations in the near future (Carnegie Foundation, 1986; Jacoby & Girrell, 1981).

These relatively meagre data suggest that the organizational dynamics of the university as a complex social service system remain relatively virgin ground for future research efforts.

6.4 Student-University Interaction

Finally, Figure 5 provides an iterative model of the interaction between the student and the university, that is, one which seeks to demonstrate shifts in the interaction among and between elements through time.

This makes clear that in-coming students are anything but tabla rasa, but rather carries with each of them (from Figure 3) nothing less than their family-in-their head - a complex mix of patterns of meaning, affect and behaviour - symbolized here by their selection of and attendance at the university of their choice. Similarly, the university in question is already pre-formed, shaped by the organization of the university system as well as the spacial (physical) arrangement of its campus. I have symbolized this complex arrangement (from Figure 4) by reference to the university's emergent goals.

Subsequent student adjustment and adaptation to this environment will then depend on the fit between the two which emerges through interaction among a range of factors.

Skills/Goals. In some students but not others, academic skills will be adequate to the demand, with a good fit experienced between what the student expects (goals) and what they get. This is

especially likely to be true of full-time students who live in residence as opposed to commuters or part-time students whose academic skills tend, on average, to be less adequate (Chickering, 1974; Carnegie Foundation, 1986). Poor preparation, however, does not guarantee failure. On the contrary, success can be achieved with adequate support (Easton & Grinsberg, 1985). Further, student variation is also reflected in their measured cognitive complexity. Perry (1970) reports that the majority of adolescent freshmen tend to be dualists on his Scheme. By contrast, a sample of adult students showed more variability, with 63% dualists, 26% multiplists and 11% relativists (Cameron, 1985). Moreover, students come to university with three aims in mind: knowledge acquisition, personal development, and the pursuit of vocation objectives (University Outcome Survey, 1983; Mentkowski & Doherty, 1984). These are rarely fixed initially such that one or more changes in academic major is commonplace over the next several years (Titley & Titley, 1980; American College Testing Program High School Profile Report, 1984). Their vocational emphasis, however, may be especially important, with part-time students, for example, somewhat more willing to leave the university than their full-time counterparts should they find a discrepancy between their goals and their experience (Carnegie Foundation, 1986).

Student-Faculty Relations. Student-faculty relations may vary from close to distant. It is now recognized that close contact is associated with a variety of positive consequences for student development (Donovan, 1984). These include student satisfaction (Mitchell, 1982; Endo & Harper, 1982), academic performance (Volkwein et al., 1985; Monterro, 1981; Pascarella & Terenzini, 1981; cf. Schuh & Kuh, 1985), social involvement (Pascarella & Terenzini, 1980; Bean & Kuh, 1984; Oramaner, 1981), positive self-regard (Shaw & Creamer, 1985) and retention (Pascarella & Terenzini, 1979). Such contact may also have adverse consequences, as parents (especially if they are working-class in origin) become apprehensive and potentially resistant in response to the unwelcome effects such contact may have in altering the attitudes, values, expectations and behaviour of their son or daughter (Donovan, 1984).

Administrative Structure. Variation in the university's administrative structure (including the student advising system) is apparent. For example, it may or may not facilitate access to information and formal sources of student support. While relatively little is known about the importance of such access generally, recent evidence indicates that it may be more salient than was once thought. Glennen and Baxley (1985), for example, found that creation of an "intrusive" advising system produced a decline in the drop-out rate from 48% to 25% in just two years.

Peer Relations. A range of factors, especially institutional size, classroom structure, financial status, residential status, and the character of the physical environment may have a major impact on the formation of relations between and among student peers.

Institutional Size. Chickering (1969), for example, found that institutional size and student retention were related insofar as large size was inversely related to student academic and social involvement.

Classroom Structure. Classrooms characterized by moderate structure (Strom & Holevar, 1982), teacher warmth and positive regard (Weinstein, 1979; Schultz, 1983), small group interaction (Johnson et al., 1979), and high affiliation and involvement (Lovitz, 1974) are consistently associated with low stress, improved performance, increased peer interaction (leading to friendship formation) and increased satisfaction.

Financial Aid. Even financial aid appears indirectly related to student relations. Several authors report a direct relationship between financial need and student attrition (Jackson & Terkla, 1983; Day, 1982; Pascal & Kanowitch, 1980; Terkla, 1985; Voorhess, 1985; see McMurray, 1984a). Since several major models of attrition (eg. Tinto, 1975; Chickering, 1969) identify social integration or social involvement, respectively, as critical to retention, financial need may operate by making such involvement more difficult.

Residential Status. Turning to residential status, this complex literature is characterized by three themes concerned, respectively, with architecture, relationship formation and gender (see Upcraft, 1982). All three have something to say about the nature and quality of interpersonal relations within university residences. That group of studies concerned with architecture has primarily explored three features of the living space (Brumer, 1984): room size (single, double, triple, suite) (Aiello et al., 1981; Gerst & Sweetwood, 1973; Baron et al., 1976; Null, 1980b; Moos, 1978; Stokols et al., 1978), hall size (short vs. long) (Baum et al., 1978) and building size (high- vs.low-rise) (Holahan & Wilcox, 1978; Ford, 1975). The typical finding is that single or double rooms, short halls and low-rise buildings are preferred because they avoid crowding, provide students with a sense of control by allowing them to regulate interpersonal contact (see also Brandt & Chapman, 1983) and provide a living environment more likely to be perceived as characterized by high support, high involvement and low competition - in short, an environment which encourages and supports relationship formation.

That group of studies concerned directly with relationship has focused primarily on roommate dyads or triads, and especially on the issue of homogeneity and relationship formation. In general, the findings support the view that homogeneity with respect to personality, curriculum and/or special needs is more likely to promote the formation of stable friendship among roommates than heterogeneity (Sprong, 1983; Schroeder et al., 1980; Richman, 1977; Anchors & Hale, 1985; Garb, 1978; cf. Lapidus et al., 1985). The exception concerns all-freshman residences which Buffington (1984) found tends to restrict choice and diversity and, in turn, tends to stifle development. Supplementary findings suggest that relationship formation may also be affected by the age and experience of the students in question (Kuh & Sturgis, 1980; Donovan, 1984; Rawlings, 1979), their level of interpersonal skill (Waldo, 1984) and their desire to enter into such relationships (Hays, 1985), especially insofar as Rose (1984) found that over half of all university students will have lost friendships since leaving high school.

Finally, that group of studies concerned with gender report that men and women experience residence living very differently, both in terms of the nature of the relationships they prefer and their manner of coping with stress. The evidence shows that women feel most comfortable in relatively close

one-to-one relationships whereas men seem to prefer more distant relationships in groups (Ballou, 1986; Moos et al., 1975; Spencer, 1984). Furthermore, in response to stress men are much more inclined toward antisocial behaviour than women, with both groups showing some tendency to generalize their response from the residence to the larger environment (Spencer, 1984). One explanation for this difference is that men experience greater stress than women. Spencer (1984) disagrees, suggesting that women may well experience more stress than men but that they handle it differently, that is, are more willing to verbally explore their negative feelings such that their greater self-awareness makes a behaviourial response unnecessary. This interpretation is complicated by Bowles' (1982) report that vandalism by male students may be variously motivated, from acquisitive or tactical to vindictive or playful.

Irrespective of the particular segment of the literature, these data show that peer relations among residential university students are an extremely potent source of influence (Chickering, 1974; Upcraft, 1982), shaping their experience of the larger university environment (Null, 1980a) and probably contributing to its developmental consequences. Astin (1977, 1985) contends, based on his own work, that such consequences are a direct function of the degree of student involvement in the social and academic life of the institution they attend, with residential placement an important facet of such involvement. Chickering (1974) agrees but shows that this is only true for the first two years; thereafter, residential placement can be limiting by promoting conformity to group norms and thus limiting the diversity of experience to which students are exposed.

Physical Environment. Finally, as regards the impact of the physical environment, the literature is complex but shows very little consensus. This is captured best by the review of Anderson (1982) who shows that the literature is presently characterized by high variation as regards the object of inquiry, theoretical orientation, variable selection, model proposed, and, of course, reported findings. The twin areas of consensus appear to be that adequate conceptualization of the physical environment will need to be multidimensional in character and that it is an influential factor.

Social Anchors. The presence and quality of these relations between students and their peers and the faculty are seen in this model as constituting two out of the three social anchors which tie, bind or bond the student to the university (the family is third anchor (see below)). Conceived in terms of social support, the importance of these anchors is no longer in any doubt. There is virtual consensus in the literature that social support provided by friends buffers students against stress (eg. Goldstein, 1980; Ganellan & Blaney, 1984; Bogat et al., 1985; Blumberg & Flaherty, 1983), probably by facilitating efforts at coping and adjustment, enlarging the available repertoire of coping strategies (Pearson, 1986) and encouraging still further participation (Gottlieb, 1981), thus garnering further support, and so on. However, a caution is required here, for the very existence of an interpersonal network need not mean that all the relationships which constitute it will provide positive support. In fact, university students consistently perceive some close personal relations as a primary source of support while others are seen as a primary source of stress (Archer & Peters, 1986; Wright, 1985; Evans et al., 1986; O'Brien, 1985; Archer & Lamin, 1985).

Perceived Demand. These various process combine to yield a level of perceived demand, varying from high to low. In this regard, the available literature support several discrete inferences. First, stress among students derives as much from their on-going personal relationships as it does from their academic studies (eg. exams, poor feedback, fear of failure), with the latter much more likely to be episodic in accord with the rhythms of the academic year (Johnson, 1979; Perkins et al., 1981; Goldstein, 1979; Perlmutter et al., 1984; McMurray, 1984b). Second, demand will be especially associated with change events characterized as frequent, undesirable, unexpected and beyond the student's control (Monroe et al., 1983; Roehl & Okun, 1984, 1985; Moos & Van Dort, 1979; Stern et al., 1982; Greenberg, 1981; Suls & Mullen, 1981; Lubin & Rubio, 1985); this is unrelated to ego strength or grade point (Camille et al., 1980). Third, demand experienced as "high" will typically be associated with a range of consequences, including physiological (eg. physical illness), psychological (eg. depression, attempted suicide), interpersonal (eg. increased conflict, disruption) and academic (eg. reduced performance) (Gilbert, 1982; Monroe et al., 1983; Cochran & Hammen, 1980; Brotsky & Tabachnick, 1980; Brodkin et al., 1984). Fourth, coping strategies used in response to demand show great variation in general as well as across gender (Sowa & Lustman, 1984; Folkman & Lazarus, 1985), with some reduction in demand to be expected through time (Camille et al., 1980; Gandy et al., 1984). Finally, it is estimated that as many as 75% of all first year students may be at risk for some sort of stress-related symptoms (Garbee, 1983), with some 6% likely to report suicidal thoughts (Wright, 1985). Of special concern is the recent report by Koplik and DeVito (1986) that students asked to assess their level of demand in nine life areas consistently reported more "distress" in 1986 than a comparable group surveyed in 1976.

Family "Fit". It was noted immediately above that demand may originate from on-going interpersonal relationships. One such category includes same-sex friendships, and heterosexual and spousal relationships. However, there is ample evidence among adolescence students that family relationships remain potent and emotionally charged, especially as critical sources of emotional and material support, both positive (Blumberg & Flaherty, 1983; Bogat et al., 1985) and negative (Held & Bellows, 1983; Wright, 1985; Evans et al., 1986; Iwai & Churchill, 1979).

One possible explanation for this "negative" source of family support concerns the very reason students go to university, that is, to deliberately undergo various forms of change. While this may find initial family support, this may not persist or may change form in the face either of change which does not "fit" with on-going family patterns of interaction (eg. Donovan, 1984) or which does not go far enough (or goes too far) in the expected direction, for example, a grade point average of 2.0 when nothing less than 4.0 was expected (eg. Held & Bellows, 1983; see also Pascarella et al., 1986b). Accordingly, level of perceived demand may vary as a function of the relationship between observed pattern change in student behaviour and its "fit" with prevailing patterns in the student's family of origin. The resulting interaction may operate to increase or reduce the level of perceived demand.

Patterns of Demand. The above comment calls attention to the fact that students' responses to the university experience may vary considerably, with some reporting varying degrees of "negative" demand ("distress", "threat") while others find the opposite, that is, "positive" demand ("challenge", "benefit"). Following Selye (1974) and Folkman and Lazarus (1985), positive demand - "eustress" - may be experienced as pleasure, challenge or a perceived sense of growth. Conversely, negative demand - "distress" - may be variously experienced as pressure, tension, anxiety, failure, hopelessness or even panic or pain.

Time and Development. The interaction of these various processes through time (t) will be associated with a variety of developmental consequences in one, several or all of the developmental domains indicated. The bulk of the evidence suggests that with experience, the majority of students will undergo gradual but increasingly significant developmental transformation (Hood, 1984), although this is not always consistent with the sequential stages of developmental theory (Davidson et al., 1980). As regards the relationship between the direction and course of such development and the level and type of perceived demand, this remains unexplored, although recall Mentkowski and Doherty's (1984) finding of regression in cognitive complexity in the face of anticipated change, in their case, graduating from university into the work world. This implies at least the possibility of a direct relationship between development and eustress and an inverse relationship between development and distress. I speculate, in light of the evidence concerning family involvement, that these relationships will vary significantly given specific evidence of the nature of the family relationships in question, for example, in accord with the Circumplex Model (Olson, 1986).

Attrition/Retention. Finally, the relationship between university experience and student development only obtains under the assumption of student retention over the course of a significant university career. In this context, the model has two things to say. First it suggests that the process of attrition or retention is rather more complex than is suggested by existing models. Second, it predicts one of four outcomes as a function of the relationship between attrition and demand. Eustress will tend to be associated with retention, the product of four conditions: positive demand, positive pattern change, positive fit with family patterns, and ample available resources. Distress, however, may also be associated with retention in which, out of the configuration of the same four variables, family fit, as a source of support, will limit the level of distress to within bearable but unpleasant limits. Next, distress will be associated with episodic attrition/retention, including changes in institutional membership in accord with changes in program or career direction. Here, the following configuration is predicted: moderate negative demand, a positive change in pattern, a positive fit with family patterns, and varying degrees of significance with regard to the availability of resources, in some cases positive (ie., money is not a problem), in others negative (ie., money is a problem). Finally, distress will in a minority of cases be associated with terminal attrition, with the students in question leaving higher education permanently. In these cases, demand will likely be negative (often high), negative or no change in pattern (eg. gross disparity between (high) academic demand versus (weak) skills adequacy),

a negative fit with family patterns, and with resources of varying significance.

Taken together, Figures 2-5 yield a complex process model of student development. Such complexity is in keeping with what is known or thought about the processes involved and, as such, represents a challenge for future theorists and researchers. In contrast to other such models, however, which begin and remain simple, the present model suggests a different approach, namely, to deliberately complexity initially in order to simplify later. That transformation would be empirically rather than theoretically guided.

7.0 IMPLICATIONS

This model has a number of implications for policy and research in complex systems.

With respect to policy, three implications may be briefly mentioned. First, conceiving of the university as a multileveled system provides theoretical confirmation of what administrative staff have long known, namely, that the university community is not monolithic, but rather consists of numerous constituencies or subsystems. As bounded interactional entities, it will hardly be surprising to discover that each has its own emergent goals, its own distinctive meaning systems, its own affective structure, and so on.

Second, such diversity helps explain the extraordinary inertia such systems tend to have. This is exemplified by an old systems aphorism: if you don't think its a system, try to change it! That is to say, such subsystems tend not to operate in isolation, but rather show varying degrees of coupling. In consequence shifts in policy or structure in one subsystem will tend to be obviated by a corresponding shift in another subsystem, often at some interactional distance from the first. This suggests, on the one hand, that change in such systems will be ponderously slow but, on the other hand, that the clearer the map of the larger system, the more likely will it be possible to select points of intervention and lines of reasoning that will be more effective than others. In this sense, the aims of policy makers and researchers would appear to intersect.

Finally, in the absence of such a systems map, ad hoc interventions may have complex, often unanticipated consequences. From the perspective of one subsystem, planned policy changes may appear rational, reasonable and, most important, practicable. From the perspective of another subsystem, the reverse may be seen to be true in all respects. This will be especially true in the absence of routine interaction among members of the two subsystems in question. Benjamin (1986) has called such relational tangles in complex systems "stable misunderstandings". The desire to avoid or disrupt such misunderstandings implies the application of a systemic perspective not merely to the students, but just as important, to relations among university staff and/or faculty. In the same vein, the above model makes explicit what others have long suspected, namely, that the organization of the university as system may have potent consequences for student development, either facilitating such growth or rendering it difficult, if not impossible.

In closing, let me turn to the research implications of the present model. The problem with university research is that it encompasses such a wide range of potential topics. Given limited resources - always the case - some selection must be made. Unfortunately, existing models of student develop offer little in the way of a programmatic guide. I suggest the proposed model does not suffer this limitation. On the contrary, it sets out four very specific research target: (1) the dynamics of students' family of origin; (2) the attributes of the students themselves; (3) the organization of the university system; and (4) the interaction between the university system and its student members.

With these targets in place, it remains (1) to translate the concepts involved into operational variables, and (2) set out a research program to collect the required data.

With respect to the first, the concepts in question lend themselves with varying ease to translation into specific variables. Olson's (1986) FACES III, for example, constitutes a well validated and highly reliable test battery easily adaptable to students and, if possible, to their family of origin. In contrast, none of the existing measures of demand appear well suited to students as a subject population (see the reviews by Derogatis (1982) and Moos and Billings (1982)) because they typically deal with events many of which students are unlikely to have experienced (eg. death of a spouse). A more reasonable strategy might involve the construction of a test instrument specifically with students in mind, perhaps by developing a pool of items with obvious face validity. Other methods of data collection - for example, semi-structured interviews and/or observational methods - might also be considered. It seems plain that a thorough review of the methodological literature across the variables in question will need to be instituted at some point.

With respect to the second, a research program, the complexity of the proposed model implies that the collection of all relevant data will not be possible within a single year. Rather, what is required is a systematic program involving some combination of cross-sectional and longitudinal data. For example, measures of the spacial arrangement of the campus need only be done once since the model calls for objective indices. Patterns of family interaction would similarly only need to be measured once. In contrast, measures of individual students and of their fit with various organizational processes appear to call for repeat measures taken over the student's entire university career. In this sense, different measures would have varying salience, with repeat measure items having immediate priority whereas single measure items may be examined as opportunity allows.

In this context, a final caveat is in order. Research and its payoff are typically closely related in time. This is especially likely to be the case when the immediate motive for the effort is practical. Such an approach is not feasible with respect to the proposed model. Rather, its full empirical explication will take several years at the minimum. It follows that before embarking on such a research program, it will be imperative to assure that the necessary resources and the required motivation are first in place. Given such an orientation, I suggest the proposed process model of student development may become a highly fruitful basis for research programming, both in theoretical as well as practical terms.

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